MARCH 7, 1960

PAPER TRADE JOURNAL

Paper Week in New York Same as Ever Only More So

Highlights on APPA, TAPPI, APA, more than 15 other association meetings, business reviews and forecasts, many technical talks, special discussions on materials management, the Russian industry, export of dissolving wood pulp, host of other topics . . .

Editorial Dept.
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Paper sculpture by Giuseppe Baggi

Pulp from Gottesman means...

PUNCTUALITY!

Bleached and Unbleached Sulphite · Bleached Hardwood · Groundwood
Bleached, Semi-Bleached, and Unbleached Kraft

Established 1886

THE GOTTESMAN ORGANIZATION

Gottesman & Company, Inc. • Central National Corporation
Central National Commercial Company, Inc.
100 Park Avenue, New York 17, N. Y.

Gottesman & Company Aktiebolag, Stockholm, Sweden • Central National-Gottesman Limited, London, England • Representatives in 55 Leading World Markets

New Jetting Tool To Clean Tube Bundles Saves Thousands Of Dollars

The new high-pressure hydraulic tool, shown above, is currently saving thousands of dollars for companies in the refining, chemical, and petrochemical industries. It is the jetting tool developed by Dowell to remove deposits from heat exchanger tube bundles.

Previous methods of cleaning these bundles have been costly, time-consuming and often inadequate. Many times bundles had to be replaced completely because of the lack of a suitable cleaning method.

This new tool has a remarkable record of thorough, fast cleaning. For example, a slurry reboiler exchanger bundle, three feet in diameter and 16 feet long, was fouled with deposits of coke and asphalt. After being jetted from only one side, the bundle was thoroughly clean. Time required: less than one hour.

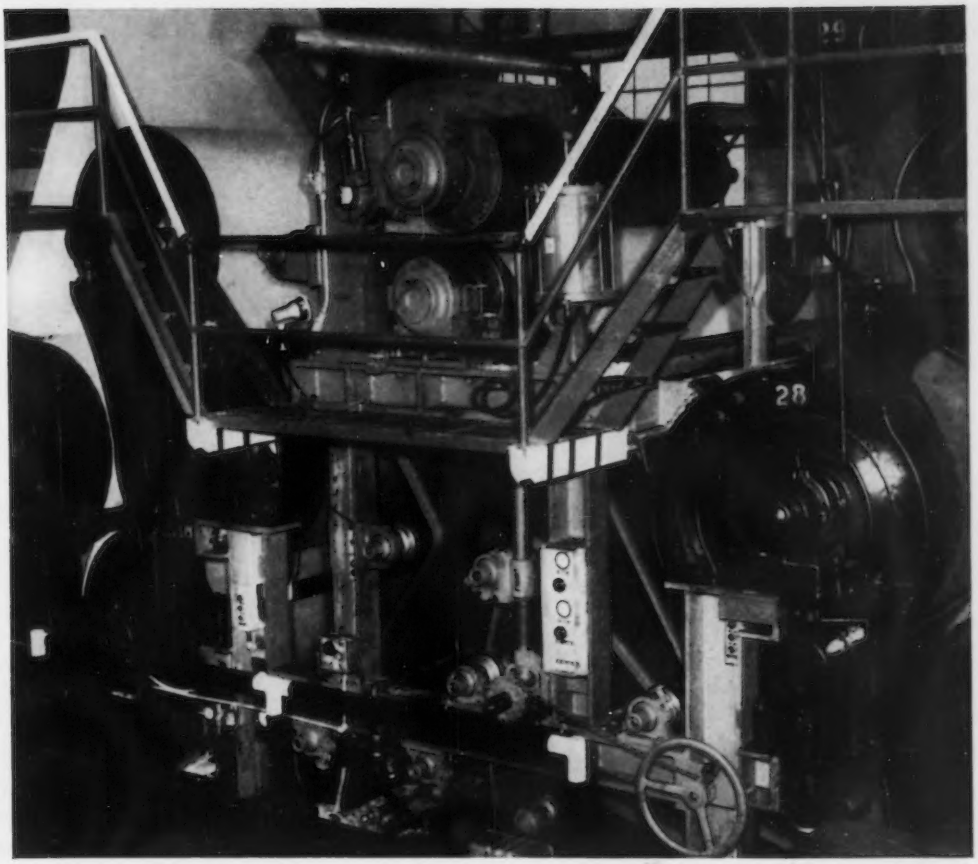
The tool holds the bundle in place for cleaning and has flanged rollers for rotation. The jet-head is manipulated automatically so that all tube spaces are covered. The jetted liquid can be either water or chemical solvents.

The new Dow Industrial Service Division will continue to offer the service which was formerly provided through the Dowell Division. For engineered recommendations to solve your cleaning problems contact the field office nearest you, or write Dow Industrial Service, 20575 Center Ridge Road, Cleveland 16, Ohio.

DOW INDUSTRIAL SERVICE

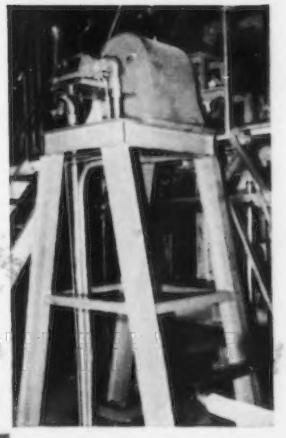
DIVISION OF THE DOW CHEMICAL COMPANY

DOW



Step up drying rate...get better finish

with a MANCHESTER HOT PRESS



Whether you make heavy board or fine lightweight papers, you can speed up your drying rate and improve sheet finish by installing a Manchester hot press in your dryer section.

One mill reports that it reduced steam pressure in its dryers from 50 p.s.i. to 30 p.s.i. with a Manchester hot press—more than compensating for drying capacity lost by removing five dryers for the installation.

Other mills consistently report improved sheet finishes after putting in a Manchester hot press.

The hydraulic drive for the hot press (shown at the left) is compact, easy to maintain, and extremely simple to install. No building alterations are required, permitting the press to be readily installed over a weekend.

Manchester has wide experience in hot press work and can provide the kind of installation that will save money and make money for your mill. Write for more information applied to your particular needs.

MMC

THE MANCHESTER MACHINE COMPANY

MIDDLETOWN, OHIO

SPECIALISTS IN DESIGNING AND BUILDING PAPER MILL MACHINERY

For good boxboard mix good materials with good refining

Bauer Pump-Through Refiners help Federal Paper Board Company, Inc. meet its customers' demands for better packaging materials. Use of these refiners on virgin pulp and secondary fibers for liner stock preserves fiber length and produces a stronger, freer draining, better forming furnish. The result: a good boxboard with high sales appeal. For firsthand information on how Pump-Through Refiners can help in your mill, call your Bauer representative.

THE BAUER BROS. CO.

SPRINGFIELD, OHIO

Inset shows one of the two Bauer 32-inch Pump-Through Refiners working on top liner stock at Federal's mill at New Haven, Connecticut.

PAPER TRADE JOURNAL

PUBLISHED WEEKLY SINCE 1872

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REMEMBER THESE DATES

May 23-25. TAPPI Coating Conference, Edgewater Beach Hotel, Chicago, Ill.

June 14-16. TAPPI Bleaching Conference, Edgewater Beach Hotel, Chicago, Ill.

June 7-9. PIMA National Meeting, St. Francis Hotel, San Francisco, Calif.

SUBSCRIPTIONS →

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FOOD MACHINERY AND CHEMICAL CORPORATION

Becco Chemical Division
STATION B, BUFFALO, NEW YORK

"Enclosing $1.00 — Send Patent License"

Well, perhaps there's a little more to your gaining use of Becco patents than just mailing your dollar in, but not much more. And certainly, no more money. The $1.00 really does cover it.

Becco has lots of patents, granted as a result of innovations in the use of Hydrogen Peroxide and other Peroxygen chemicals developed in Becco's Research Laboratories. But they don't do us a whole lot of good locked tightly in our safe. So, we long ago adopted the following policy:

If one of our patents can help you, we'll be glad to license the rights to you **perpetually,** for just one dollar. You get a nice certificate, incidentally, to cover the legalities, but more important – you also get free our complete engineering help in setting up your process, handling the material, maintenance, etc., etc.

What do **we** get? You as a **customer** – we hope – but there's no obligation on your part. Just seems to work out that way, though – when we know enough about a particular peroxygen to hold a patent on its use, chances are we've also learned enough to produce it purer than anyone else. You benefit from this; we do, too.

Use the coupon below to ask for a Sales Engineer – or our list of patents – that may help you solve an important problem.

BECCO fmc

BECCO CHEMICAL DIVISION, FMC
Station B, Buffalo, New York
Dept. PTJ-F

Gentlemen:
Please send your list of patents available on the use of

- ☐ Hydrogen Peroxide
- ☐ Peroxygen Chemicals
- ☐ Persulfate Chemicals
- ☐ Please have a Sales Engineer call.

NAME_____
FIRM_____
ADDRESS_____
CITY_____
ZONE____ STATE_____

Problems in handling Hydrogen Peroxide

Becco's Four-Fold Engineering Service Program—offered free—includes:

1. Comprehensive survey of your facilities.
2. Specific proposal with recommendation of proved equipment and where it is obtainable.
3. Installation supervision by Becco.
4. Periodic inspection and permanent service.

Can you use this free Becco help, based on more years of experience with bulk handling of H_2O_2 than any other manufacturer? Use the coupon to let us know.

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BECCO CHEMICAL DIVISION, FMC
Station B, Buffalo, New York
Dept. PTJ-B

Gentlemen:
Please tell me more about your Four-Fold Engineering Service.

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FIRM_____
ADDRESS_____
CITY_____
ZONE____ STATE_____

TECHNICAL BULLETINS

We got 'em—
You can have 'em!
They're FREE!

Years of experience in paper and pulp processing have produced a library of technical information which is available in individual bulletins, free on request. Use the coupon below to let us know which you'd like to receive.

- **No. 31 — Groundwood Bleaching Variables — A Statistical Approach.**
- **No. 32 — H_2O_2 Bleaching of Chemicals and Mechanical Pulps.**
- **No. 47 — Peroxide Bleaching of Pulps.**
- **No. 48 — High-Density Pulp Bleaching.**
- **No. 64 — Development Studies on Last-Stage H_2O_2 Bleaching of Alkaline Pulps.**
- **No. 65 — Peroxide Bleaching of Southern Pulps.**
- **No. 66 — Becco Laboratory Procedures for Pulp Bleaching, 1955 Ed.**
- **No. 91 — Peroxide Bleaching of Chemi-Mechanical Hardwood Pulps.**
- **No. 92 — Peroxide Bleaching of Chemical Pulps.**

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Gentlemen:
Please send me a copy of each of the following bulletins:

— — — — — — — —

NAME_____

FIRM_____

ADDRESS_____

CITY_____

ZONE____ STATE_____

New Cold Caustic Bleach Process

Looking for a way to use greater amounts of low-cost, more plentiful pulp—without capital investment for bleach equipment? Then let a Becco Sales Engineer show you our new technique* which allows you to bleach in the same equipment regularly used for the manufacture of cold caustic pulp.

In this new process, peroxide bleach liquor is added at the Bauer Refiner, and bleaching occurs during the refining operation. Bleach response depends on refiner densities.

Up to 20 points brightness increase has been obtained in commercial operations to date, and with no additional steam costs, no holding time, and no excessive chemical costs.

Becco can assist you immediately in setting up a production run and evaluating results. First step: use the coupon to let us know you're interested.

*—Patent Pending

BECCO fmc

BECCO CHEMICAL DIVISION, FMC
Station B, Buffalo, New York
Dept. PTJ-H

Gentlemen:
Please have a Sales Engineer give me more information on Becco's Cold Caustic Bleach Process.

NAME_____

FIRM_____

ADDRESS_____

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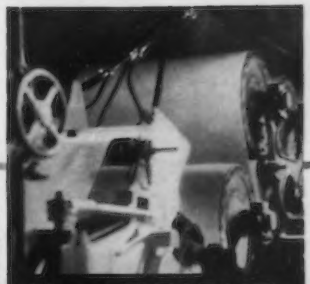


How BRIGHT Is BRIGHT?

That's a hard question to answer. It depends on how the pulp is treated.

Trouble is, paper can show an 86 level at the layboy, but by the time the paper is delivered, this has dropped to 82 or lower. With conventional bleaching methods, that is.

Many chemical pulp producers have found the answer to this problem in Becco's Dryer Steep Bleaching Process (patented, but licensed perpetually for one buck). Applied by means of spray pipes across the pulp sheet ahead of the dryers, Becco Hydrogen Peroxide increases brightness permanence and bleaches in transit. Often, in fact, an 86 layboy level **improves** to 88 by delivery time.

This is just one example. Becco has a vast amount of technical knowledge compiled from 31 years of experience with all types of pulp. If you'd like help with your pulp, free of any obligation, let us know with the coupon below.

BECCO fmc

BECCO CHEMICAL DIVISION, FMC
Station B, Buffalo, New York
Dept. PTJ-C

Gentlemen:
We would like help with our pulp. Please have a Becco Sales Engineer call.

NAME_____

FIRM_____

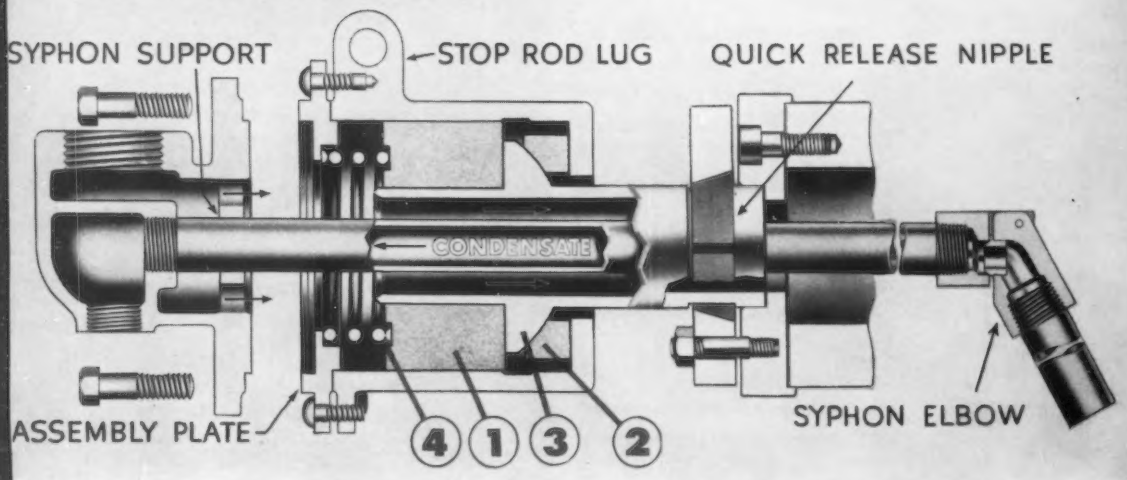
ADDRESS_____

CITY_____

ZONE____ STATE_____

SUPER Type SBP Johnson Joint with "Quick Release" Nipple

for Paper Machine Dryers . . . . with STATIONARY Syphon Pipes



Only 4 Internal Parts

This simplicity of construction means fewer breeding places for trouble. The SUPER construction—which features rock-hard "Green Streak" seal rings and special Ni-Chrome plating—reduces friction and wear importantly. The "Quick Release" Nipple makes mounting, or inspection, a one-man one-wrench operation. The Syphon Elbow ends all the troubles of the unwieldy curved syphon pipes—hinges to pass right through the joint.

Like all Type S Johnson Joints, the Type SBP is completely self-supporting—needs no external supports of any kind. All in all it is a good example of why Johnson Joints are first choice in the paper industry. Type S Johnson Joints are available in sizes from ¼" through 4", for both through-flow and stationary syphon pipe applications.

FREE TRIAL—*We'll gladly furnish a pair of Johnson Joints for 90-day trial in your own mill. Write for information.*

1. **GUIDE**—Makes the joint self-supporting. It is of self-lubricating long-wearing carbon-graphite.
2. **SEAL RING**—Also of carbon-graphite. Eliminates all packing and requires no lubrication.
3. **NIPPLE**—Rotates with the roll, and seals against the ring.
4. **SPRING**—Serves for initial seating only. In operation joint is pressure-sealed.

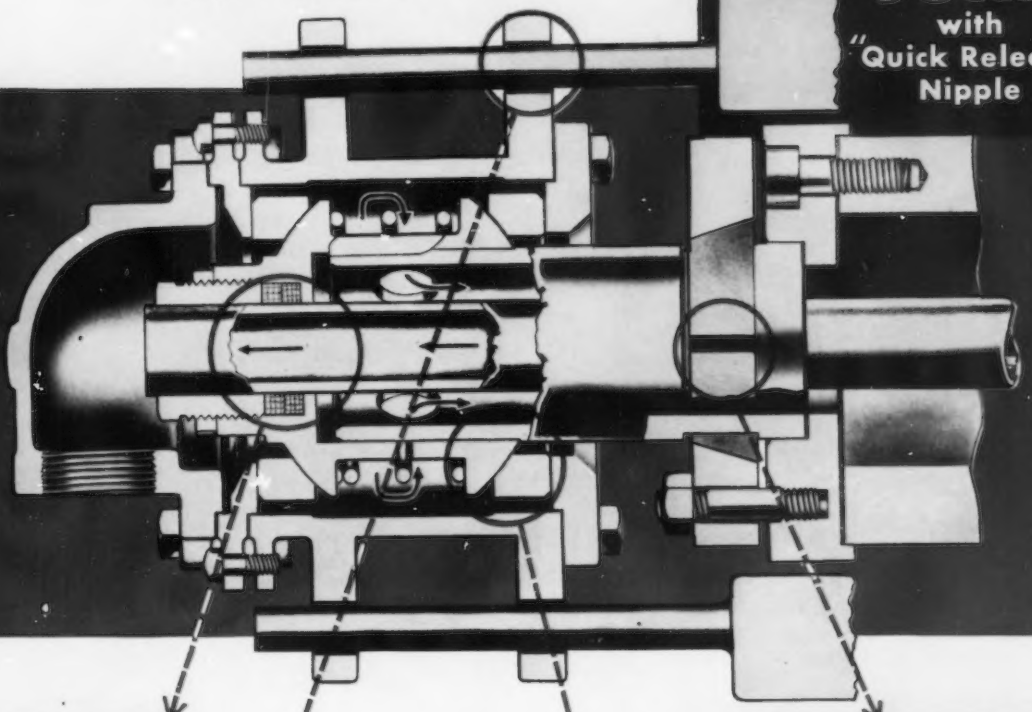
THE JOHNSON CORPORATION

828 WOOD STREET • THREE RIVERS, MICHIGAN

Rotary Pressure Joints • Direct Operated Solenoid Valves

. . . . and for Paper Machine Dryers with ROTATING Syphon Pipes

SUPER Type L-N Johnson Joint with "Quick Release" Nipple



Best Design Yet

Rotating syphon pipe does not rotate in the packing; thrust collar, nipple, packing gland and syphon pipe all rotate together as a unit. Joint needs no lubrication or adjustment. Time-proved construction has only a few simple parts—a design which thwarts trouble, permits easier field servicing. Assembly plate provides ready access to syphon pipe. Type L-N Johnson Joints are available in sizes from ½" through 8".

Easy On . . . and Off

Johnson "Quick Release" Nipple utilizes powerful wedging action to lock nipple securely to journal. You install the joint —or remove it for inspection—with just an end wrench; no danger of damaging nipple with heavy pipe wrenches.

Floating Action

Simple rod supports carry all the weight of the body and connections—permit the rotating assembly to "float" freely inside. Can be adapted for machines with open or enclosed gearing.

Super Construction . . . and Stamina

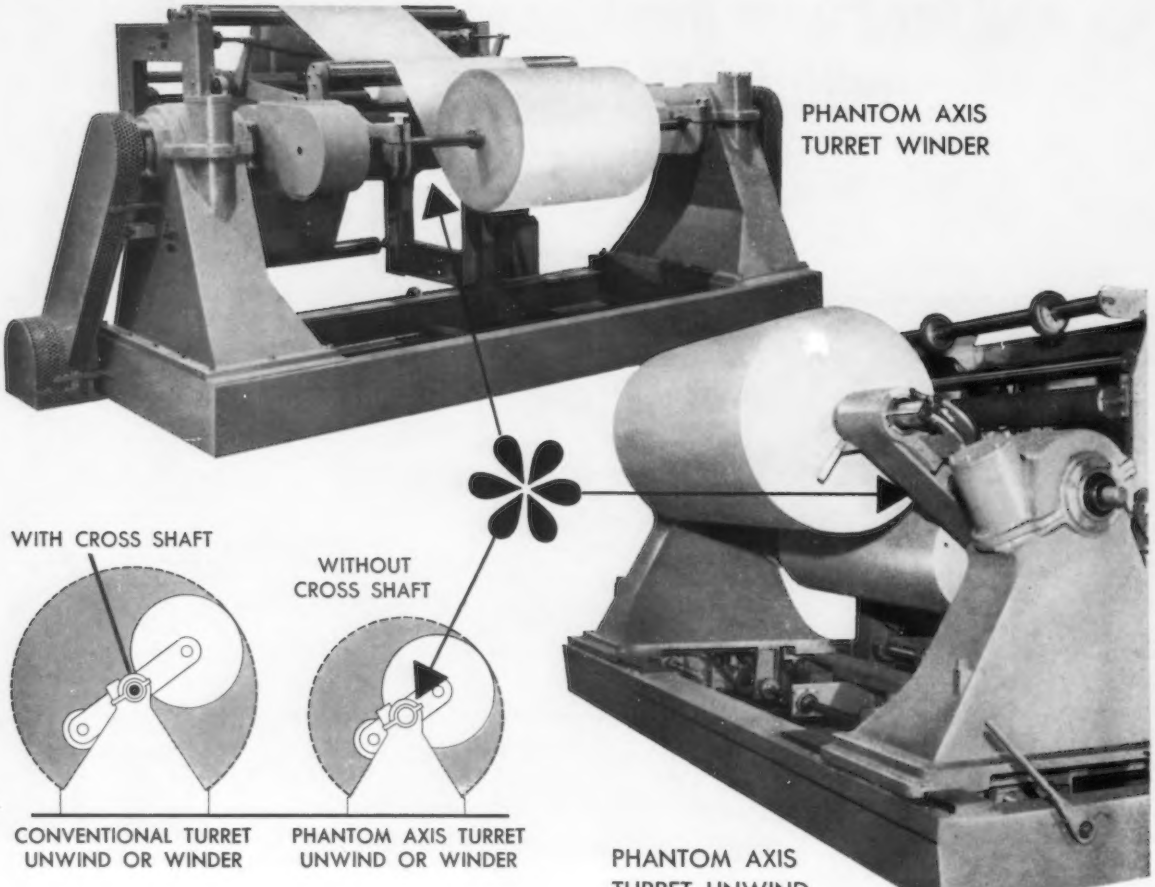
Teams "Green Streak" seal rings, of much harder and denser structure, with Ni-Chrome plating on wearing surfaces. Results: Considerable reduction in friction load and much longer service life.

Write for Literature

Bulletin S—Johnson Joints for use with both through-flow and stationary syphon pipe applications.

Bulletin N—Johnson Joints for use with rotating syphon pipe.

IT'S WHAT'S NOT THERE THAT COUNTS*



Egan's revolutionary Phantom Axis Turret Unwinds and Winders *eliminate* the center cross shaft for greater roll diameters and more compact overall design. In addition, these units require less overhead and floor space for installation (see drawing).

The more compact design also assures greater rigidity and better operation at high speeds. Phantom Axis Unwinds and Winders are engineered to permit speeds in excess of 1000 fpm; are available in web widths through 120", and include power rotation of the turret and knife cut-off as standard features. Air chucking of cores or shafts is available at the customer's option.

ADDITIONAL FEATURES

PHANTOM AXIS UNWIND: Automatic or manual side shifting; provision for splicing with either inside or outside of web up (optional); flying splices at full machine speed; pneumatic constant tension system (optional).

PHANTOM AXIS WINDER: Side shifting available (automatic or manual); constant or tapered tension; smooth transfers at full machine speed with unique single motor design.

Egan

CABLE ADDRESS: EGANCO—SOMERVILLE (N.J.ER)

FRANK W. EGAN & COMPANY
SOMERVILLE, NEW JERSEY

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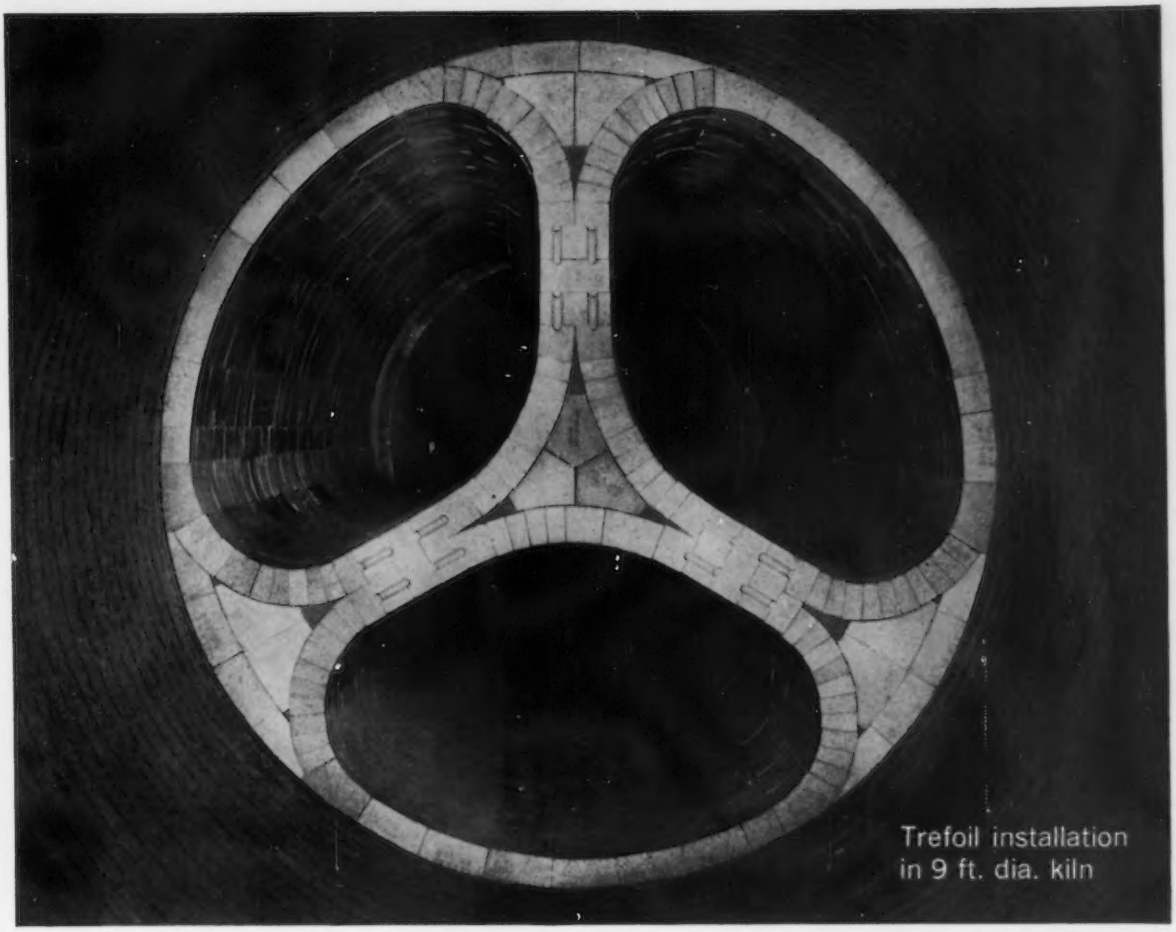
Write for complete information.



Trefoil installation
in 9 ft. dia. kiln

Refractory Heat Exchangers increase rotary kiln efficiency

Harbison-Walker TREFOIL design provides important benefits

This construction built with refractories especially suited for the purpose is showing exceedingly gratifying economies in rotary limestone and lime sludge kilns. Its use is the means of imparting sensible heat to the charge, even to the degree of partial calcination in some installations.

The structural strength of the trefoil construction is proving its excellent durability. An original installation in a 10′ diameter kiln has now been in service for three years, with indications of considerably longer life. This good service presently is approaching repetition in a number of other kilns.

The magnitude of preheating of the charge in passing through the trefoil tends to moderate the temperature in the hottest zone, necessary for a given rate of production. The development of excessive accretions in the high temperature zones with certain fuels may be reduced and the lining life extended.

Net results from the use of the trefoil are fuel savings and increased production in kilns which are not greatly overloaded beyond rated capacities.

H-W technical service is freely offered in helping determine various details such as length of the trefoil section (usually 15 to 25 ft.) and longitudinal location for the various conditions involved.

Harbison-Walker Refractories Company
AND SUBSIDIARIES
GENERAL OFFICES: PITTSBURGH 22, PENNA.
World's Most Complete Refractories Service
HW 60-3

Conserve water with Lodding Self Cleaning Showers

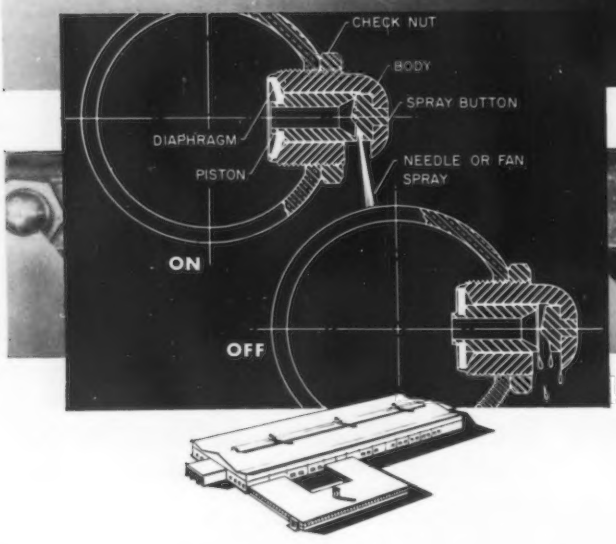
In mill after mill Lodding Showers are conserving water — cutting operating costs — performing effectively.

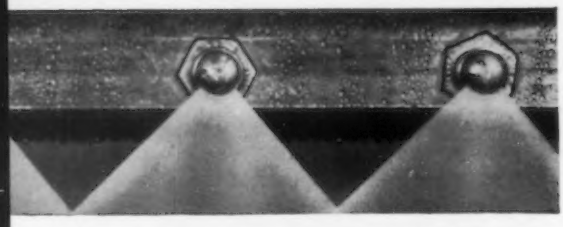
In showers it's the nozzle that counts. And Lodding Nozzles have been engineered to give you the greatest possible showering efficiency, whether your system uses fresh or clarified white water.

Lodding Nozzles are designed with a built-in, sealed piston. In operation, pressure of the water forces the piston against the spray button, which is precision-milled to create the exact spray pattern desired — from an 80° fan to a needle stream.

As particles become lodged in the nozzle, the piston oscillates and automatically frees them. When the water is shut off momentarily the piston retracts. After the water is turned on again there is a brief period before the piston resumes contact with the spray button. During this interval larger particles are flushed from the nozzle.

It will pay you to investigate all the advantages of Lodding Self Cleaning Showers. Lodding, or one of our sales representatives, will be pleased to tell you more about them.

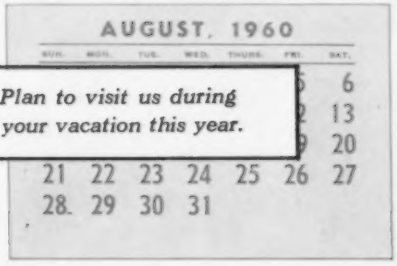




LODDING
Engineering Corporation
AUBURN, MASSACHUSETTS

12 days for 120 papermakers

REMEMBER *Plan to visit us during your vacation this year.*



Again in 1960, as in the past 3 years, Huyck will meet the paper industry's continuing demand for practical training in the use and care of felts by holding four 3-day Felt Workshops. These classes, each graduating up to 30 Applied Felt Technologists, will mark the introduction of an entirely new program. Greater emphasis will be placed on informal discussions of the latest felt and papermaking developments. In addition, greater attention will be focused on machine interests of individual papermakers.

The result: a diversification of discussion that will stimulate new ideas for the betterment of papermaking; a more practical approach to finding solutions to the major felt application problems encountered in the production of all grades of paper and paperboard.

Check the dates shown here and write us telling which Felt Workshop you plan to attend.

HUYCK FELTS

Huyck Felt Co.,
Rensselaer, N. Y.;
Aliceville, Ala.;
Division of Huyck Corporation.
In Canada: Kenwood Mills Ltd.,
Arnprior, Ontario.

NEW HUYCK FELTS ★ INDUSTRIAL FABRICS

FIRST IN QUALITY • FIRST IN SERVICE SINCE 1870

They're both guns, but...

each is in a class by itself . . . like Wyandotte's PURECAL® O

A little bit of water won't do you any harm. But a little bit of lead? That's different! Still, there's no gun you can afford *not* to take seriously.

It's the same way with calcium carbonates. There are important differences . . . and it pays to give them careful consideration. Wyandotte PURECAL O is in a class by itself! Reason: It is precipitated by a special process which consistently yields agglomerate-free particles 0.15 micron in size, that are cubical in shape. Purity and whiteness are *exceptional.*

One of the many benefits this rigid standard of quality makes possible for you is a more fully automated operation. For example, slips made "off-formulation", by variations in other raw materials, are substantially reduced when PURECAL O is included in your coating formulations.

In the final analysis, however, PURECAL O must be proved in *your* formulation. So, for the practical test that will demonstrate its value . . . convince you of its advantages . . . write for samples and technical data, today. *Wyandotte Chemicals Corporation, Dept. 759-J, Wyandotte, Michigan. Offices in principal cities.*

Wyandotte CHEMICALS

MICHIGAN ALKALI DIVISION

PACING PROGRESS WITH CREATIVE CHEMISTRY

Things are growing at Buckeye

PLANT CAPACITY DOUBLED IN 1959

Buckeye is growing bigger to serve you even better.

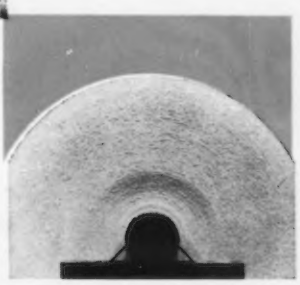
A recently completed addition doubles plant capacity, and both units have the most advanced equipment. Improved processes include double-screening for outstanding cleanliness, and 8-stage bleaching for top brightness without strength loss.

There's growth in Buckeye's timber supply, too. Company-owned holdings have been increased to over 800 thousand acres. Seedlings selected for pulping characteristics and fast growth are being planted at the rate of 10 million a year. If you're looking for a dependable source of supply to match your growth, let's talk it over. Buckeye specializes in market pulp.

BUCKEYE CELLULOSE CORPORATION
Memphis 8, Tenn.

Wood pulp plant at Foley, Fla.—Cotton linters plant at Memphis

BUCKEYE PULP



Bleached and Semi-Bleached Kraft from Southern Pine

New "brain cells" for precision chlorination control

Here's another exciting development from Diamond's customer-service research. These low-cost chlorination cells are rugged, precise, completely dependable... give you a simple means of measuring oxidation potential to control chlorine reaction in vessels or sample lines.

No other chlorination cell combines these advantages:

1. Both electrodes are in a single body.
2. Resists virtually every condition encountered in paper mills and other applications of oxidation-potential principle . . . including high pressures and temperatures up to 200° F.
3. Lowers routine maintenance.
4. Reduces down time of automatic control system.
5. Eliminates bridging between electrodes by fibers.
6. Eliminates need for diluting stock or for separate sampling line.

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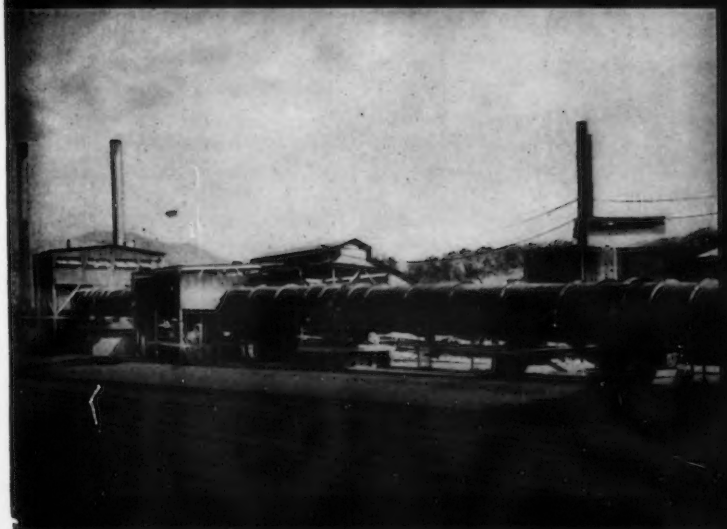

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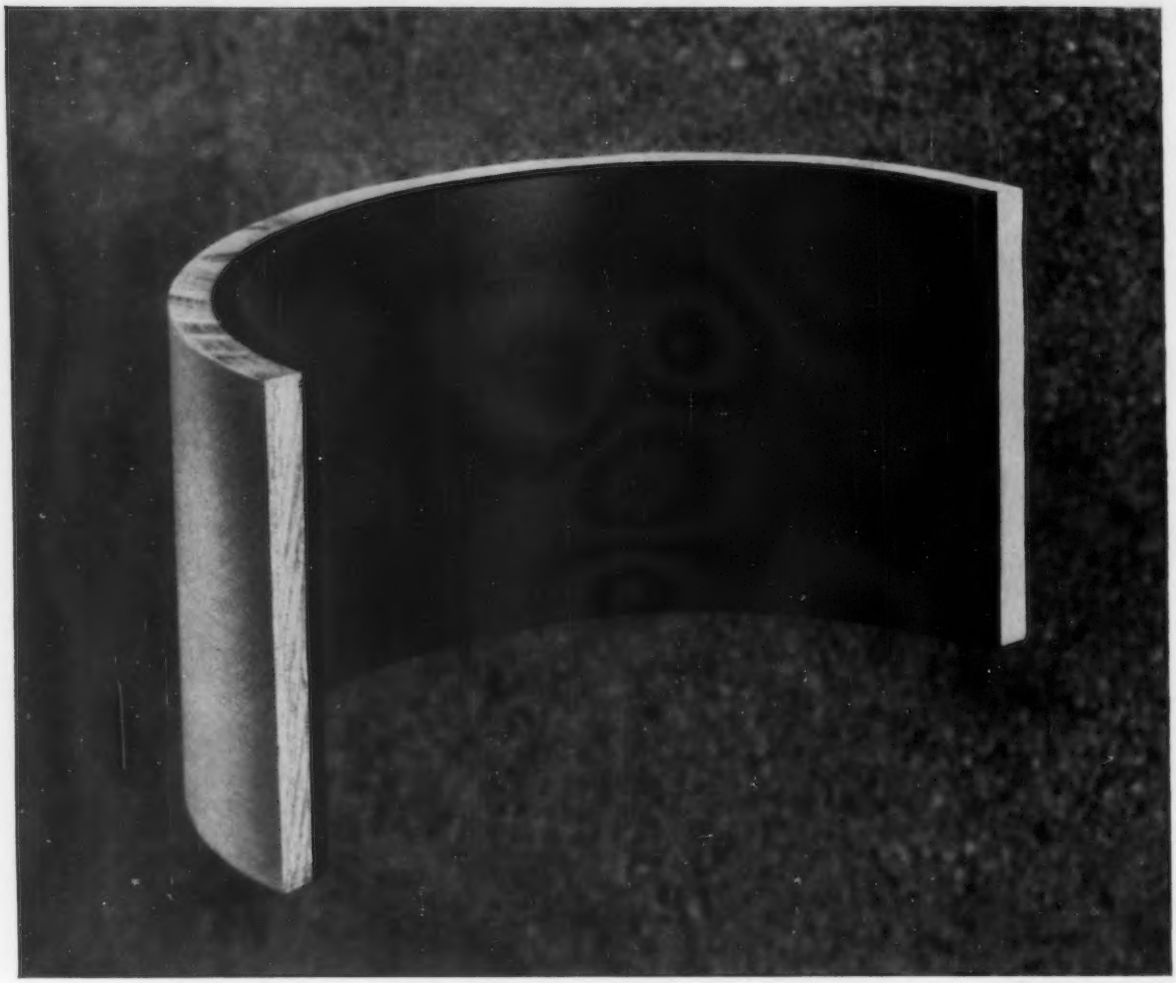

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A leading eastern paper manufacturer says: *"After eight months of service on our #3 paper machine dryer, there are no visible signs of wear or deterioration on the pair of Panelyte bearings. On the basis of our tests, and their performance with no lubrication, I am recommending the installation of a complete set of these bearings on this machine."*

Get complete details on this revolutionary new "greaseless" bearing. Write today to Panelyte Division, Dept. PT-37, St. Regis Paper Company, 150 East 42nd Street, New York 17, N. Y.

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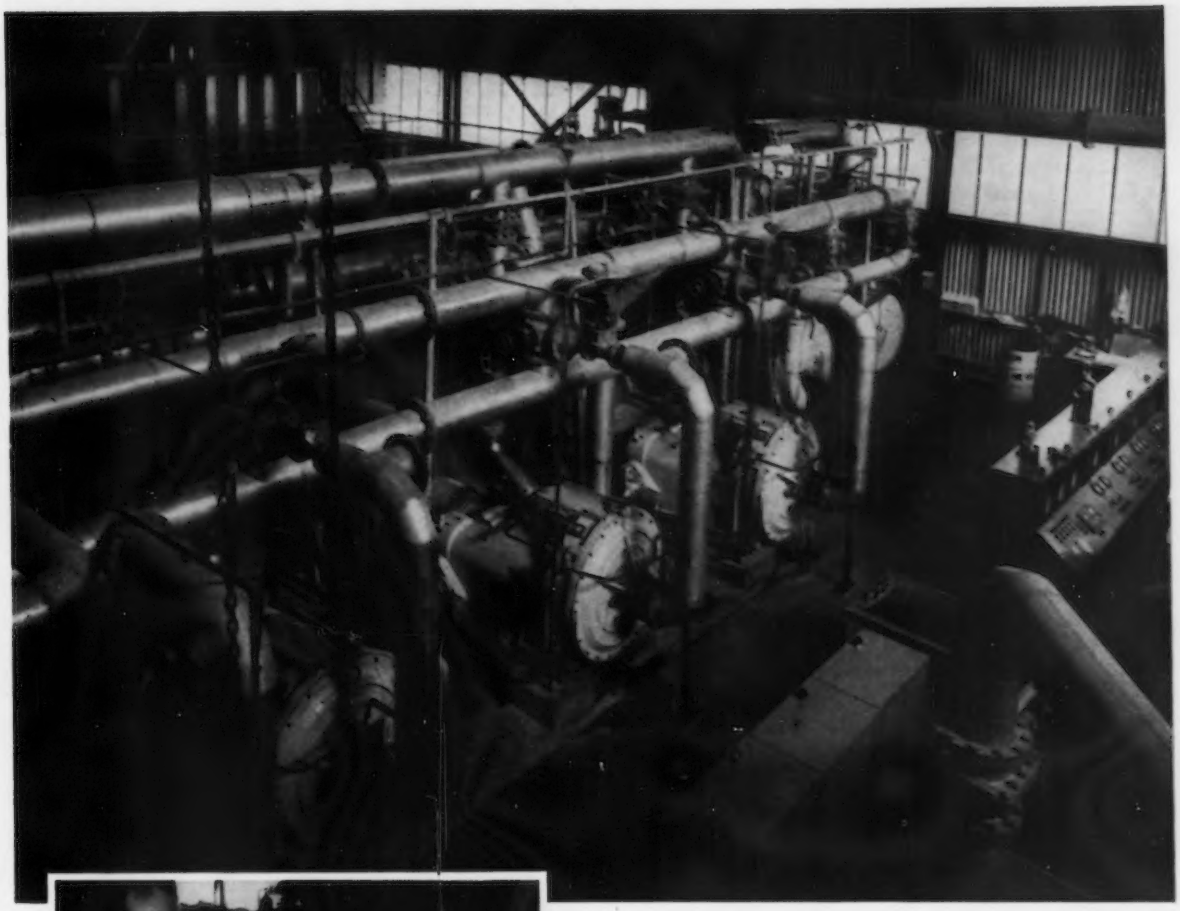

After two years of tough work Jones Double-D Super-Stainless discs show only .065" wear — evenly distributed and with parallelism perfectly retained.

for Jones Double-D's on the Seminole Chief

Sept. 7, 1957 was the day St. Regis began to produce their fine quality Seminole Chief Board in Jacksonville — with the help of ten Jones Double-D's for both primary and secondary refining. Regular six month checks of the Jones Super Stainless discs in each Double-D show a maximum wear of only .0027" per month. Applied against the available disc wear of .750", this actually indicates a disc life of more than 23 years!

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Have a tough refining problem? Better look into the Jones Double-D. Write to E. D. Jones Corporation, Pittsfield, Mass., for bulletin EDJ1083.

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Trends

Business Outlook Excellent Says Economist

"Prophets of doom" are again uttering their dire prediction about the immediate economic outlook. M. R. Gainsbrugh, chief economist, National Industrial Conference Board, in an address to the Pulp Producers during Paper Week presented much welcome evidence to contradict these. Mr. Gainsbrugh in the conclusions to his well documented speech said that the existing battery of exceptional data as of late February continues to foreshadow—1. Rising consumer expenditures—2. Greater capital outlays by business, particularly for cost cutting equipment—3. Increased governmental outlays by state and local governments.

Present Capacity 40 Million Tons

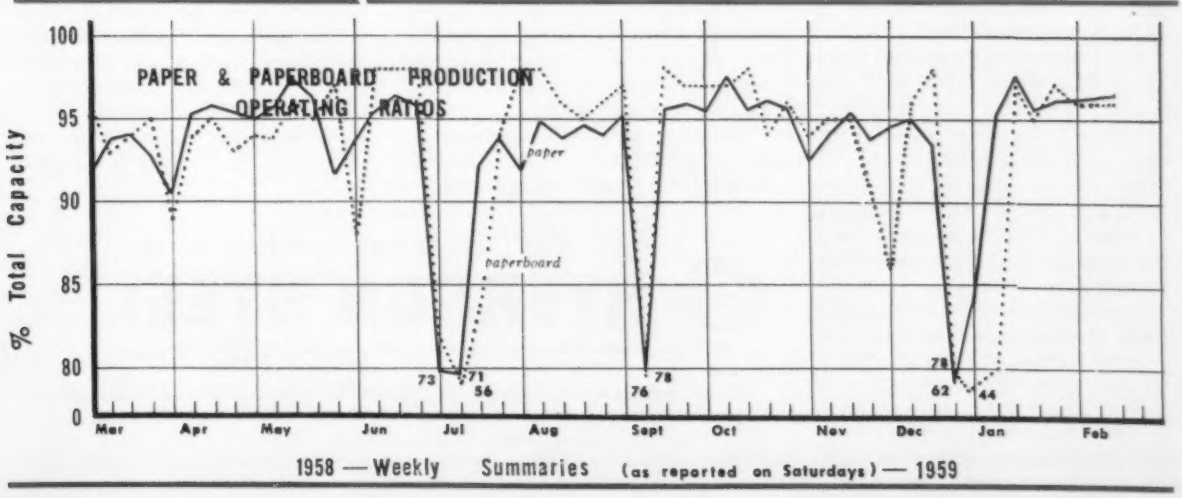
Paper and board capacity at the end of 1959 was 40 million tons per year. Increases presently planned for 1960 and 1961 amount to about 4% or 1.5 million tons per annum according to B. Slatin, APPA economist in a report on page 49.

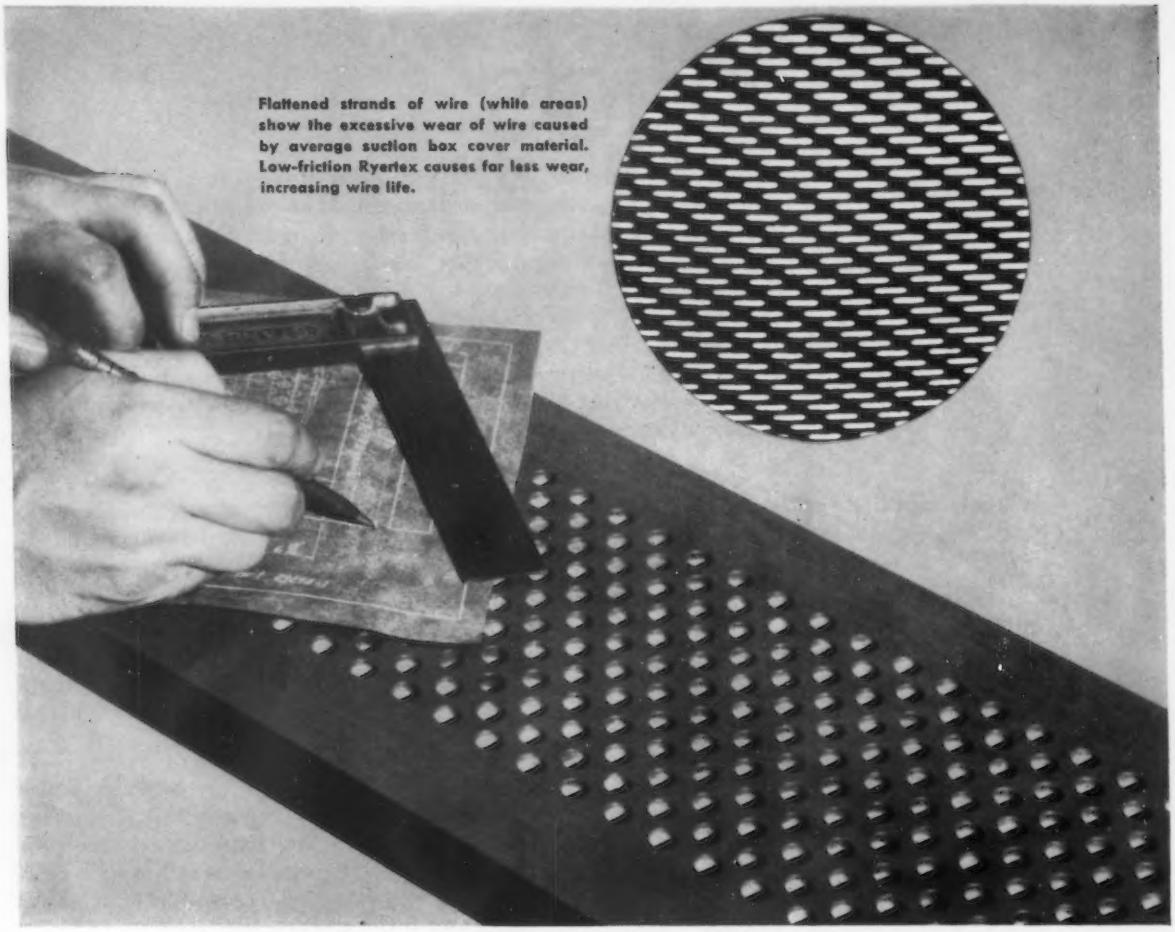
Dissolving Pulp Exports on Rise

Exports of dissolving pulp last year hit a new high points out R. Vincent on page 35. He said 25% of the output is now exported.

U. S. Decade Pattern Pictured

The 1950's was a decade of remarkable growth for the pulp, paper and paperboard industry in all its major aspects and if current economic trends continue the 1960's will see a similar growth. This was reported by Robert E. O'Connor, executive secretary of APPA during Paper Week. Gains over the decade in consumption of paper and paperboard were shared by all major grades. Gains of 25% or more were recorded in use per person of tissue. Similar gains were made in fine paper and special industrial papers. Per person use of printing papers increased 17% over the decade and paperboard 21% reported Mr. O'Connor. Per capita consumption of coarse paper for wrapping and packaging, and consumption of newsprint showed moderate gains. Total wood pulp production rose from 14.8 million tons in 1950 to 24.3 million tons in 1959.





Flattened strands of wire (white areas) show the excessive wear of wire caused by average suction box cover material. Low-friction Ryertex causes far less wear, increasing wire life.

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Use Ryertex® suction box covers

At your wire's only point of drag—the suction box—you can reduce wire wear substantially by the use of job-proven Ryertex.

No other cover material has a lower coefficient of friction with water lubrication—less than 0.01, or about half that of wood covers under normal operating conditions. Wires slip so smoothly over Ryertex that their service life is increased as much as 25%—four wires doing the work of five. This means important wire savings.

Your covers last longer, too, because Ryertex is a phenolic, laminated-textile composition that is smooth, tough, long-lasting. When a leading paper mill tested Ryertex against two competitive materials, the Ryertex covers lasted three times as long as material A, 35 times as long as material B.

Because even the largest covers are made of one continuous piece of Ryertex, they may have any perforation pattern of holes or slots, straight or tapered, in any combination that works best for you.

Next time you replace suction box covers, forming boards or pipe covers, investigate Ryertex. Call your nearby Ryerson plant.

You will also find many marked advantages in Ryertex paper mill bearings.

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PJT PAPER TRADE JOURNAL

WEEK OF MARCH 7, 1960

Red Deer, Alta., Mill Again Mooted

J. A. R. Choate of Red Deer, president of Albert Pulp Mills Ltd., has announced that his company plans to build a $50 million pulp and paper mill near Rocky Mountain House in West Central Alberta.

He said, the mill, capable of handling 450 tons of pulp a day, will begin production late next year near the junction of the Clean and South Saskatchewan rivers, about 50 miles west of Red Deer. This project is one on which we have published news reports many times in recent years.

ROY K. FERGUSON, chairman of the board, St. Regis Paper Co., presents the Ferguson Award trophy, named in his honor, to Kenneth Kiser of the St. Regis Muskingum Fibre Products Co. division, Coshocton, Ohio. This plant, scoring a frequency rate of zero in lost-time accidents over the past three years became the first recipient of the award which is to be awarded annually to the St. Regis location having the best three-year cumulative safety record. Left to right are: William R. Adams, president of St. Regis; Mr. Ferguson; Kenneth Kiser, chief electrician, Muskingum Fibre Products Co.; and Merlin C. Race, director of safety for St. Regis.

Buckeye Wins Safety Award for Third Time

For the third consecutive year the Buckeye Cellulose Corp. of Memphis, Tenn., has won the National Paper Week Safety Award presented annually by APPA. Buckeye mills have also won two of the seven Regional Safety Awards given by the association during Paper Week.

The national award was received on behalf of Buckeye's Cellulose and Specialties Division by Obed Windham, safety director, who accepted the award last year.

The National APPA Safety Award is given each year to the mill with the lowest five-year cumulative accident frequency rate per million man hours worked, exclusive of logging and wood operations. It was established by the American Paper and Pulp Ass'n. in 1958 and was won by Buckeye that year and in 1959.

In addition to the national award, the APPA gives an annual regional award to the mill with the lowest five-year cumulative accident frequency rate in each of seven regions. This year's award for the Central Region has been won by the Cellulose and Specialty Division of Buckeye in Memphis, as was the case in 1958. The award for the Southern Region has been won by the Buckeye Cellulose Corp. of Foley, Fla. The other regional winners are:

For the Lake States—the Falls Paper and Power Co., Oconto Falls, Wis., a Scott Paper Co. affiliate; for the Mid-Atlantic States—P. H. Glatfelter Co., Spring Grove, Pa.; for the Mid-West—the Joliet, Ill., plant of the Ruberoid Co.; for the Pacific Coast—the Port Townsend, Wash., mill of the Crown Zellerbach Corp.; and for New England—the Millers Falls Paper Co., Millers Falls, Mass.

In addition to Buckeye of Memphis, this year's winners in the Lake States, Mid-Atlantic and Pacific Coast Regions were repeat winners having won their regional awards in 1958.

Soda to Kraft at Warren

S. D. Warren Co. this spring is changing over its soda pulp mill at Cumberland, Me., to kraft.

Paper and Paper Board Production

The American Paper and Pulp Association reported the ratio of the United States paper production to mill capacity for the week ending February 20, 1960, at 96.5 per cent compared with 97.6 per cent, revised for the preceding week. The ratio was 90.9 per cent for the corresponding week a year ago.

The National Paperboard Association reported the paperboard production ratio for the week ending February 20, 1960, at 96 per cent, compared with 96 per cent for the preceding week and 94 per cent for the corresponding week a year ago.

(Detailed statistics on page 76)

Paper Week Report Same As Ever Only More So

More than 20 different associations held numerous sessions during the Annual Paper Week held the end of February in New York. There were well over a hundred speakers at the various meetings so that it is difficult to sum up over-all impressions of the week's proceedings. Much time was devoted to reviewing last year's business and forecasting the pulp and paper outlook in the new decade. This tied in with separate discussions of foreign markets, expansion of the Russian industry, the Common Market, etc. Little that was completely new seems to have been said on these subqects, the majority of which seem to have been quite completely covered in this magazine during the past year.

The Materials Committee of APPA devoted its session to a new subject "Materials Management." We are not sure if this new subject refers to an expanded purchasing function, control of raw materials flow or is another name for "Material Handling." A large proportion of the papers on the TAPPI program seemed to be of a theoretical or research nature, although there were a number which presented reviews of certain fields or new developments of a practical nature.

Some of the most interesting or unusual papers presented at the meetings of the various associations are presented with varying degrees of condensation in the following pages.

APPA Elects 1960 Officers And Executive Committee

The American Paper and Pulp Ass'n. has elected H. E. Whitaker, chairman of the board, Mead Corp., president.

Reuben B. Robertson, Jr., president, The Champion Paper and Fibre Co., is first vice president.

Vice presidents include: W. R. Adams, president, St. Regis Paper Co.;

M. D. Bardeen, president, Simpson-Lee Paper Co.;

Alexander Calder, Jr., president, Union Bag-Camp Paper Corp.;

Wm. H. Chisholm, president, Oxford Paper Co.;

John R. Kimberly, outgoing APPA president, presents gavel to H. E. Whitaker, new president.

R. C. Doane, president, International Paper Co.;

R. F. Erickson, president, Rayonier Incorporated;

Robert Faegre, president, Minnesota and Ontario Paper Co.;

J. L. Madden, vice president, Scott Paper Co.;

M. C. McDonald, president, Great Northern Paper Co.;

Howard W. Morgan, vice president, Pulp, Paperboard and Container Group, Weyerhaeuser Co.;

George E. O'Connor, president, Mohawk Paper Mills, Inc.;

R. J. Sund, vice president and general manager, Marathon, a Division of American Can Co.;

Samuel R. Sutphin, chairman of the board, Beveridge Paper Co.;

A. P. Mitchell
Chairman
Sulphite Paper Manufacturers Ass'n.

G. J. Ticoulat, senior vice president, Crown Zellerbach Corp.; and

R. W. Wortham, Jr., executive vice president, Southland Paper Mills, Inc.

Executive Secretary-Treasurer is Robert E. O'Connor.

Sulphite Ass'n. Elects Mitchell and Gould

Aaron P. Mitchell, senior vice president and director of marketing, Riegel Paper Corp., has been elected chairman of the Sulphite Paper Manufacturers Ass'n.

The new vice chairman of the association is Leslie W. Gould, assistant vice president of Crown Zellerbach Corp. and manager of its Eastern Division.

Elected to the Sulphite Paper Manufacturers Ass'n. Board of Governors were J. R. Cryan, Fraser Paper, Ltd.; R. C. Flom, Marathon, a Division of American Can Co.; E. W. McCourt, Consolidated Water Power & Paper Co.; and R. A. Nash, Sorg Paper Co. Also, W. C. Shorter, Union Bag-Camp Paper Corp.; D. L. Stocker, KVP Sutherland Paper Co. and H. B. Vergara, International Paper Co., Southern Kraft Division.

Neil E. Nash and Alfred Southon, long active on the Board of Governors, were elected Honorary Life members of the board.

Charles H. Leach was reappointed secretary-treasurer of the Association.

Ass'n. of Pulp Consumers Re-elects White President

F. R. White, president of Union Mills Paper Mfg. Co., New Hope, Pa., has been re-elected president of the Association of Pulp Consumers, Inc., for the coming year. Mr. White has been president during the past year and now begins a second term. The election took place at a meeting of the board of directors held immediately following the Annual Meeting of the association.

Other officers elected for the coming year are T. M. Gilbert, president

F. R. White
President
Ass'n. of Pulp Consumers

J. B. Cowie
President
Kraft Paper Ass'n.

P. H. Glatfelter, III
Chairman
Printing Paper Mfrs Ass'n.

of the Gilbert Paper Co., Menasha, Wis., as vice president, and Reed R. Porter as secretary and treasurer.

At the Annual Meeting held earlier in the day, the following men were elected directors for a three-year term, 1960-63:

Charles H. Claypool, manager, Oxford Paper Co., Oxford Miami Division, West Carrollton, Ohio;

W. E. Daverin, vice president and treasurer, Rising Paper Co., Housatonic, Mass.;

Bartow Kelly, treasurer, Crocker, Burbank & Co., Ass'cn., Fitchburg, Mass.;

Orin R. Summerville, president, Brownville Paper Co., Brownville, N. Y.; and

George R. Wallace, 3rd, president, Fitchburg Paper Co., Fitchburg, Mass.

In addition to the newly elected directors listed above, the following present directors will continue on the board:

D. W. Bergstrom, vice president, Bergstrom Paper Co., Neenah, Wis.;

D. G. Driscoll, president, The Sorg Paper Co., Middletown, Ohio;

G. F. Durand, president, Port Huron Sulphite & Paper Co., Port Huron, Mich.;

T. M. Gilbert, president, Gilbert Paper Co., Menasha, Wis.;

Allen F. Horton, president, Curtis Paper Co., Newark, Del.;

R. L. Kerridge, vice president, Riegel Paper Corp., New York, N. Y.;

W. W. McIntire, director of purchases, Diamond National Corp., The Gardner Division, Middletown, Ohio;

Howard C. Peterson, Jr., Kraft Division, St. Regis Paper Co., New York, N. Y.;

N. A. Seidensticker, president, Chillicothe Paper Co., Chillicothe, Ohio; and

F. R. White, president, Union Mills Paper Mfg. Co., New Hope, Pa.

New Officers Elected By Kraft Paper Ass'n.

J. B. Cowie, assistant vice president of Scott Paper Co., Chester, Pa., was elected president of the Kraft Paper Ass'n. and R. A. Nash, vice president and general sales manager of Sorg Paper Co., Middletown, Ohio, was elected vice president.

Mr. Cowie succeeds S. Douglas Fleet, vice president and general sales manager of Albemarle Paper Manufacturing Co., Richmond, Va., as president of the association. Mr. Nash succeeds Mr. Cowie as vice president.

Secretary of the Kraft Paper Ass'n. is Dernell Every and assistant secretary is T. K. Heston.

Glatfelter Chairman Of Printing Paper Ass'n.

P. H. Glatfelter III, P. H. Glatfelter Co., was elected chairman of Printing Paper Manufacturers Assn., Inc., at the fourth annual meeting.

Mr. Glatfelter was also elected to the executive committee with W. L. Jennings, West Virginia Pulp & Paper Co.; F. H. Murtfeldt, Consolidated Water Power & Paper Co.; Walter Shorter, Union Bag-Camp Paper Corp., and G. E. Young, Crown Zellerbach Corp.

F. S. Leinbach
Chairman
Glassine & Greaseproof Mfrs Ass'n.

A. M. McBurney, Oxford Paper Co., and W. K. Graves, International Paper Co., were named vice-chairmen.

Other officers are Robert E. Canfield, president; Merrill R. Smeeth, executive secretary and treasurer, and Albert S. Thomas, assistant secretary-treasurer.

Other members of the executive committee elected in prior years and continuing in office are: N. H. Bergstrom, Bergstrom Paper Co.; J. R. Cryan, Fraser Paper Ltd.; Mr. Graves; Mr. McBurney; B. W. McEachern, Northwest Paper Co.; E. G. Murray, St. Regis Paper Co.; A. G. Sharp, Kimberly-Clark Corp.; H. W. Suter, Champion Paper & Fibre Co., and W. H. Wilcox, S. D. Warren Co.

GGMA Re-elects Officers

At its 29th Annual Meeting, the Glassine & Greaseproof Manufacturers Ass'n. re-elected F. S. Leinbach, president, Riegel Paper Corp. as chairman of the association for 1960. Guy E. McCorison, president, Thilmany Pulp & Paper Co., Kaukauna, Wis., was re-named vice-chairman for 1960. Charles H. Leach will continue to serve the Association as secretary-treasurer.

Featured speaker at the meeting was Wilbur M. McFeely, vice president, Riegel Paper Corp., who keynoted a discussion on employer-employee communications.

Members of the Glassine & Greaseproof Manufacturers Ass'n. are: Deerfield Glassine Company, Inc.; Hamersley Manufacturing Company; Hartford City Paper Division, Minnesota Mining & Manufacturing Co.; Nicolet Paper Corp.; Rhinelander Pa-

per Co., Division of St. Regis Paper Co.; Riegel Paper Corp.; R -W Paper Co.; Thilmany Pulp & Paper Co.; and Westfield River Paper Co., Inc.

Stevens Elected New Chmn. APPA Controllers Com.

Harold F. Stevens, comptroller of the St. Regis Paper Co., was elected chairman of the Controllers committee of APPA for 1960-1961.

Mr. Stevens has been with St. Regis for the past 30 years. He was appointed assistant treasurer in 1946, assistant comptroller in 1948 and comptroller in 1956. Active in accounting and tax associations, Mr. Stevens is currently president of the Tax Executives Institute, Inc.

Writing Paper Manufacture Elect Officers

Arthur Crane, Crane & Co., Inc., Dalton, Mass., was re-elected president of the Writing Paper Manufacturers Ass'n. Mr. Crane is the third member of his family to serve as president of the association. Crane & Co., Inc. was one of the founders of the WPMA at Pittsfield, Mass., on February 13, 1861.

F. R. Andrews, Esleeck Manufacturing Co., Turners Falls, Mass., was elected vice president and chairman of the Cotton Fiber Paper Group. H. W. Suter, Jr., Champion Paper & Fibre Co., Hamilton, Ohio, was elected as vice president and chairman of the Sulphite Bond Group.

M. C. Dobrow was re-elected executive secretary-treasurer. John F. Darrow was re-elected assistant secretary and Miss Olive F. McGill was re-elected assistant treasurer.

Scrolls in appreciation of their services to the Writing Paper Manufacturers Ass'n. were presented to

Arthur Crane
President
Writing Paper Mfrs. Ass'n.

John D. Zink, Hammermill Paper Co., and Donald F. McCall, Simpson-Lee Paper Co.

Mr. Zink, who recently retired as senior vice president of Hammermill Paper, was presented a scroll which cited the fact that he had served as president of the asociation, 1942-1944 and, most uniquely, as chairman of the Sulphite Bond Group and Rag Content Paper Group. Mr. Zink has served on the association's executive committee for 20 years, the longest period of service by any member on the association's executive committee. He continues with Hammermill as a director and consultant.

D. F. McCall was cited in his scroll for his three years service on the executive committee.

At the Annual Meeting the association's constitution was changed to reflect the new name of the Cotton Fiber Paper Group.

Previously, this group, one of five in the association, had been known as the Rag Content Paper Group. However, the companies in this group desired to change its name to the Cotton Fiber Paper Group to reflect more accurately the cotton fibers of the new cotton cuttings and the cotton linters consumed in the manufacture of the paper made by these mills.

Newsprint Service Bureau Elects Officers

At the annual meeting of the Newsprint Service Bureau, M. C. McDonald, who is president of the Great Northern Paper Co., was re-elected president of the bureau. Other officers are: R. W. Wortham, Jr., Southland Paper Mills, vice president, and J. J. Zima, treasurer.

President McDonald announced that C. F. Honeywell, who has served the bureau as secretary for the past three years, has resigned. No announcement has been made as to a successor in that position, nor has Mr. Honeywell indicated the nature of his future plans.

Tissue Ass'n. Elects Young President

Robert M. Young, president, Waterfalls Tissue Co., was re-elected president of the Tissue Ass'n. at the group's annual meeting. New vice president of the association is L. R. Watson, vice president and general manager, Tuttle Press Co., and treasurer is William E. Erisman executive vice president, Erving Paper Mills.

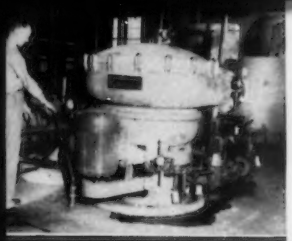
SAPI Names Veneman President

Gerard E. Veneman, vice president and director of sales for Nekoosa-Edwards Paper Co., Port Edwards, Wis., was named president of the Salesmen's Ass'n. of the Paper Industry (SAPI). Mr. Veneman succeeds Joseph Hoffman, of Standard

R. M. Young
President
Tissue Ass'n.

G. E. Veneman
President
Salesmen's Ass'n. (SAPI)

G. E. Dyke
Chairman, National
Council for Stream Improvement



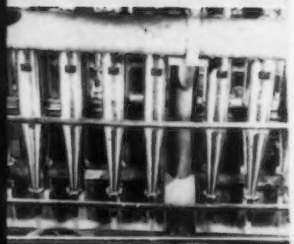
Model 14

BIRD CENTRISCREENS

now built in three sizes, for super-efficient pressure screening of large or small volumes of stock at low overall cost per ton.

Model 10

Model 6



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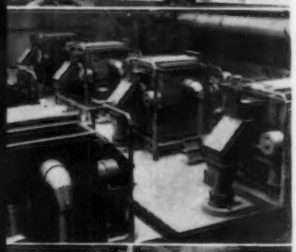
for highly effective and economical removal of shives and fine dirt, improved hydration, reduced breaks and increased output.

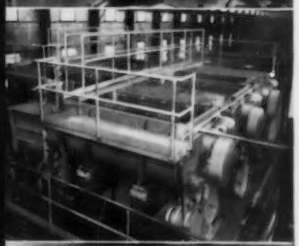


BIRD VIBROTOR SCREENS

for handling big volumes of stock through slotted plates at high consistencies in small space.

BIRD JONSSON SCREENS

for high capacity, high efficiency knotting and perforate plate screening of pulp, building board, straw and waste stocks.



BIRD ROTARY SCREENS

for fine, slotted plate screening to assure constant production of uniform quality, well formed paper.

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for removal of heavy, gritty dirt particles that do damage to wires, rolls and pumps and increase rejects. Available in regular or "King" size.

ONE PAGE CONVENTION

of machinery that helps you make better, cleaner, more uniform pulp and paper, more of it per day at lower cost per ton, fewer rejects, breaks and shutdowns

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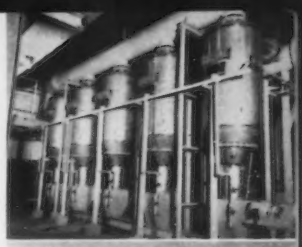
BIRD CENTRIFFLERS

for prompt, thorough removal of junk and heavy dirt from stock as it leaves the pulpers; provides low cost protection of papermaking equipment.



BIRD CENTRIFINERS

for triple centrifugal treatment of specialty paper stocks to remove specks, metal and rubber particles.

BIRD SAVE-ALLS

for recovery of valuable fibres from waste water at lowest net cost per ton.

VICKERY PRESS FELT CONDITIONERS

for keeping felts continuously clean and open, assuring top speed operation without midweek shutdowns.

VICKERY WET FELT CONDITIONERS

for keeping cylinder machine top and bottom felt continuously clean, maintaining machine speed and reducing downtime.

VICKERY DOCTORS

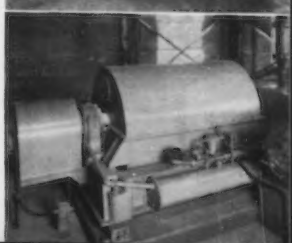
for maintenance of constantly clean, smooth roll surfaces, in twelve different designs, engineered for every roll.

BIRD CONSISTENCY REGULATORS

for precise, dependable control of stock consistency plus a permanent, continuous chart record of incoming and outgoing consistencies.

BIRD LIME MUD FILTERS

for delivering uniformly dewatered feed to the kiln, thus improving kiln operation and economy.



Paper Manufacturing Co., Richmond, Va.

Mr. Veneman was previously honored by SAPI in 1959 when he received the president's award as the association member who, in the opinion of the president, "has done the most for SAPI during the year." The award was in recognition of his services as national membership chairman. He was instrumental in organizing a Wisconsin section of SAPI and also assisted in the formation of an Atlanta, Ga., SAPI division.

Robert E. O'Neill, Riegel Paper Corp., Boston, was elected first vice president.

LFMA Elects Officers

At the Twelfth Annual Meeting of the Laminated Foil Manufacturers' Ass'n. the following officers were elected for the ensuing year: president—J. E. Bouhl, Anaconda Aluminum Co.; vice president—Maurice Denenberg, Denny Corporation; executive committee—Harold T. Shehan, Reynolds Metals Co., for a term of two years ending February 1962.

Paul A. Dillman, H. D. Catty Corp., is also a member of the Executive Committee, whose term expires February 1961.

Arthur A. Thomas, who is the executive director, is the secretary-treasurer of the association. His address is 1002 Union Trust Building, Providence 3, R. I.

The members of this association, which was organized in February 1948, serve the fancy, decorative paper and graphic arts industries. There are 13 members.

Stream Improvement Group Looks at New Problems

Both technical and administrative aspects of water and air pollution and their control were reviewed during the National Council for Stream Improvement, Inc. meetings. Eight separate sessions held in the Waldorf-Astoria were attended by more than 200 persons.

At a meeting of the Board of Governors, George E. Dyke, chairman, disclosed that the research program had been completely revised in order to expedite more promising projects and to drop those where investigations seemed complete

Mr. Dyke declared that the basic studies on aquatic biology are now being summarized. Also under investigation have been such major problems as sludge dewatering and disposal, color and BOD reduction. Less common problems such as river slime, oyster investigations, reaeration, odor control, and the improvement of stream analysis techniques have gained increased attention.

Mr. Dyke stated that the air pollution program, in operation for 3½ years, has resulted in techniques and portable equipment for the identification and quantitative measurement of the specific compounds responsible for kraft mill odors.

A manual dealing with all aspects of air pollution as related to fuel burning is now being published by the Council, he said. This manual should prove useful to power plant personnel in unintegrated paper mills as well as in pulp mills.

Work on black liquor oxidation of liquors obtained from "fatty" woods is underway, and appears to be a problem of foam control. It is this aspect which is receiving most attention.

Plans for 1960 include studies on the chlorination of non-condensible gases from kraft pulping operations which will be followed by threshold odor evaluations of the compounds emitted from mill stacks.

On the subject of water pollution control, Mr. Dyke stated, that the use of advanced recovery techniques, water re-use, and the application of modern treatment developments has prevented increases in total discharge of pollution loads despite vast increases in production.

A symposium covering technical, legal and tax problems of liquid and gaseous effluent disposal was led by Dr. Harry W. Gehm, technical advisor from the Council. Six papers were presented, which will be reprinted at a later date.

The following officers were elected during the meetings: Chairman, George E. Dyke; vice-chairmen, Roy V. Weldon, Russell F. Erickson; treasurer, E. Nobles Lowe; executive secretary and assistant treasurer, Russell L. Winget.

Original drawings by 12 of America's top editorial cartoonists were displayed during Paper Week in New York, February 21-25. Cartoons represented a salute to the paper industry as one which has helped to perpetuate itself by replenishing its natural resources. Seen here with a portion of the display is Thomas M. Jones, advertising manager, Beloit Iron Works which created and sponsored the exhibit as a public service. Display will go on national tour later on.

Competition Leads to Greater Emphasis on White

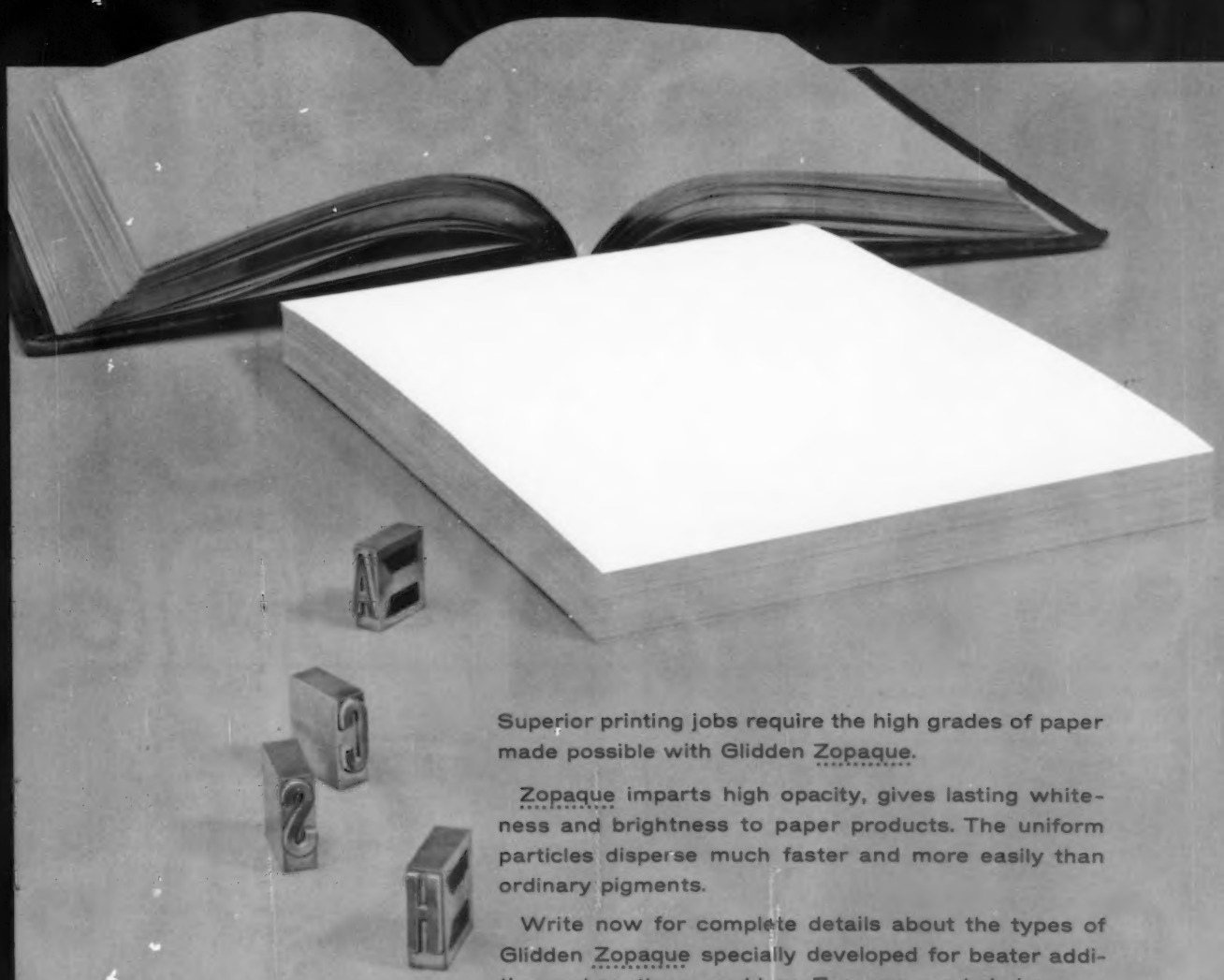
In an exhibit by the Dyes Department of American Cyanamid Co., the most frequently used "color" for paper, white, is shown to be a variable that includes a wide range of hues. Featuring papers of the same weight, the exhibit showed more than 200 distinct tones and shades readily available under the single name of white.

Opening the display, Cyanamid sales manager William Boyce described white as the hardest color to match in paper, and the hardest to maintain. "Nevertheless," he said, "white is a basic, standard color in paper. Better and brighter whites are necessary if the industry is to satisfy the needs of its customers."

While white is white to most people, the determination and choice of white is a highly complex question to papermakers and printers. According to color experts, there are over a thousand distinguishable shades of white, more than of any other color. The several hundred samples exhibited by Cyanamid in its "Study in White" represent the production of 25 major mills. Each paper was a different shade of white.

Highly Impressionable

Printing papers with finest reproduction qualities are made with Glidden Zopaque® Titanium Dioxide



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Zopaque imparts high opacity, gives lasting whiteness and brightness to paper products. The uniform particles disperse much faster and more easily than ordinary pigments.

Write now for complete details about the types of Glidden Zopaque specially developed for beater addition and coatings—and how Zopaque can help improve whatever paper products you manufacture.

QUALITY Glidden PRODUCTS

FINEST PIGMENTS FOR INDUSTRY

The Glidden Company
Chemicals—Pigments—Metals Division
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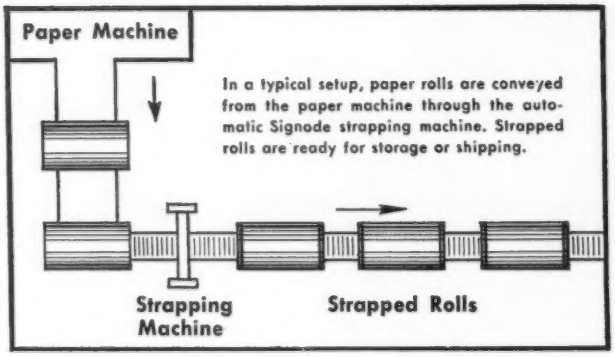
(This advertisement is printed on paper stock containing Glidden ZOPAQUE Titanium Dioxide.)

Machine applies strapping uniformly close to the edge of every roll.

Now! Automatic roll-end binding!

This new Signode roll-end binding machine is automatically controlled and operated. The strapping is straight, close to the edge, and uniformly tight and secure on every roll. The machine handles rolls from 32 inches to 60 inches in diameter and of any width —straps them more than fast enough for the largest of finishing room operations . . . automatically and dependably positions, tensions, seals, and cuts off the strap as the rolls are conveyed through it. There's nothing else like it!

These machines are now in operation in modern paper mills. For information on this important new development in the paper industry, call the Signode man near you, or write:


Paper Machine
In a typical setup, paper rolls are conveyed from the paper machine through the automatic Signode strapping machine. Strapped rolls are ready for storage or shipping.
Strapping Machine
Strapped Rolls

SIGNODE STEEL STRAPPING CO.

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U.S. a Major Factor in World Export Of Dissolving Wood Pulp

In the past 12 years the United States has become a major factor in world exports of dissolving wood pulp, according to the author.

Rex Vincent,
Vice President,
Bulkeley, Dunton Pulp Co. Inc.

In a report to the annual meeting of the U. S. Pulp Producers, Inc., during A.P.P.A.'s 83rd Annual Paper Week, Mr. Vincent revealed that:

1. United States exports of dissolving wood pulp in 1959 reached a new all time high with a total of 285,000 tons;

2. Twenty-five per cent of domestic dissolving wood pulp currently moves to export markets;

3. United States shipments of dissolving wood pulp to the domestic market were also at an all time high last year, exceeding 1958 shipments by 90,000 tons, though only slightly higher than in 1957.

4. Production in the United States of dissolving wood pulp more than doubled in the 1950 decade.

The major growth for the decade, Mr. Vincent said, took place in the first five years. The last five years were relatively stable, with production fluctuating between 950,000 and slightly over a million tons a year.

Canada's production of dissolving wood pulp between 1953 and 1958 declined as a result of increased competition from new sulphate dissolving mills in the United States. In 1959, however, Canadian production increased by 55,000 tons. with overseas exports accounting for most of the gain.

Three Major Uses

In 1958, Mr. Vincent went on to say, three uses accounted for 74 per cent of the total North American demand for dissolving wood pulp-rayon acetate yarn, staple fibers and cellophane. In the United States the trend for rayon has been more or less in the form of a plateau at the top of a normal growth curve, he stated. Production of all types of rayon-acetate over the past ten years has ranged between 630,000 and 507,000 tons.

Prospects for this segment hinge largely on the outcome of the battle with synthetics for the tire cord market. While rayon filament has been successful in holding virtually all of the market represented by new passenger cars, it has lost ground in the replacement market.

Cellophane Use Growing

Cellophane, the other major consumer of dissolving pulp in North America, has done better despite competition from such other films as polyethylene, vinyl, and even waxed or glassine paper. In 1958, cellophane consumed about 210,000 tons of wood pulp. In 1959, the production was up to about 218,000 tons, which would require about 225,000 tons of pulp.

In 1960, it is expected that production will increase by 10,000 tons, which means that cellophane is not only keeping up with population growth but also squeezing into new uses.

Dissolving pulp is consumed in 46 countries other than the U. S. and Canada. The American share of world consumption of rayon acetate in 1958 was only 20 per cent. Thus 80 per cent of the consumption of these pulps is overseas. As time goes on, Mr. Vincent suggested, this overseas portion would increase with respect to the domestic portion.

Overseas Expansion

Meanwhile, however, facilities for the production of dissolving wood pulp have also been expanding overseas. Most of the overseas nations producing this pulp have been doing so for quite a long time, but France and Turkey only began in 1955 and the Union of South Africa in 1956. The total capacity of these overseas mills is apparently about the same as that of North America — perhaps somewhat greater.

In 1957, North America produced 1,350,000 tons of dissolving and the rest of the Free World 1,773,000. In 1958 North America produced 1,235,000 and the rest of the Free World 1,552,000 tons. Germany, in 1958 was 95 per cent self-sufficient with respect to her dissolving pulp needs; France, another large consumer, produced 33 per cent of her needs; Italy 32 per cent; Japan 91 per cent; Austria 25 per cent.

The recent growth of overseas capacity for the production of dissolving wood pulp has a bearing, of course, on the prospects for an expansion of North American exports. Mr. Vincent concluded, however, that despite recent reports to the contrary, "It does not seem possible that there are sufficient fiber resources on the European continent, whether softwood, hardwood, or cereal straw to provide for a continuing increase in overseas production of this grade." He pointed out further that the quality of the dissolving pulp produced abroad will not satisfy the needs for tire cord or acetate. These conclusions, he suggests, provide a ray of light for the future of North American exports.

Presented February 22 before the U. S. Pulp Producer's Ass'n.

Felt Facts

FILLING-UP PROBLEMS?

Try Albany's proven 1-2-3 Felt Washing Program!

Nearly everyone has the problem of keeping paper machine felts clean and open throughout their life.

Albany Felt has done something about this by establishing a separate department whose FIRST and ONLY function is to be of service to you in this vital area.

Many paper mills already have taken advantage of this new service. All have shown outstanding improvement with higher machine speeds, better drainage and prolonged felt life.

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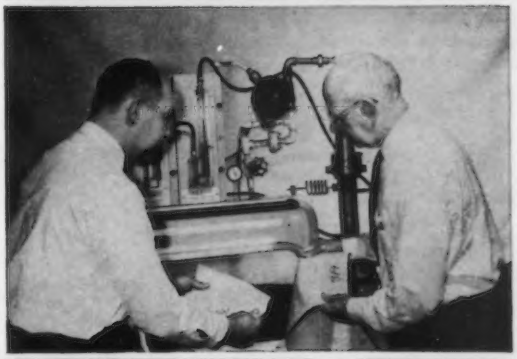
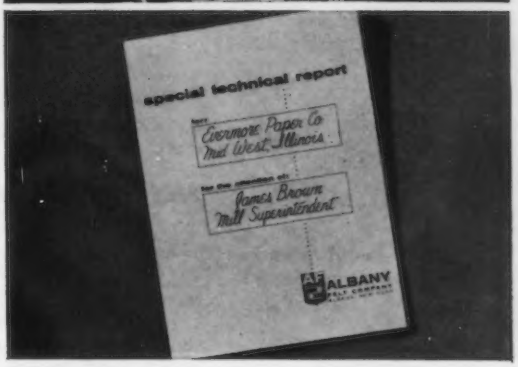
1. On the spot analysis

Because there is no universal cleaning solution or felt cleaning method, our felt washing program engineer visits your mill to work with you on your individual problem.



2. Laboratory testing

Next we use the latest scientific equipment and chemicals to test portions of your used felts to discover the best cleaning compounds and washing equipment to fit your needs.



3. Written report

Specially trained engineers then submit a written report to you covering every phase of their recommendations of a felt washing program tailored to your operation.

If you feel your present felt cleaning procedures may be improved or if you wish information on the adaption of proven methods to your particular machines–

TALK IT OVER WITH YOUR ALBANY FELT SALES ENGINEER

Will the Russians Overtake U.S. Pulp and Paper Industry?

Speaking to APPA's Export Committee during Paper Week, Mr. Lagerloef gave an insight into Russian intentions for their pulp and paper industry.

Eric G. Lagerloef,
Secretary, Export Committee,
American Paper & Pulp Ass'n.

When Khrushchev addressed the Supreme Soviet in January 1959, he laid before the Russian people an ambitious Seven Year Plan which has as its ultimate purpose a marked increase in the standard of living of that country. Attention was eventually being paid to consumer durable and non-durable goods, and housing as opposed to the heavy emphasis placed on steel, hydro-electric power expansion and other lines needed for armament, as was the case in previous years.

Of this broad industrial expansion, the pulp and paper industry was to receive due emphasis. An extensive modernization of present facilities and new construction has been embarked on, which would increase wood pulp production from 2.3 million tons in 1958 to 5.3 million short tons in 1965, paper from 2.4 million to 3.9 million short tons and board from 780 thousand to 3.1 million short tons. As can be seen the emphasis is being placed on wood pulp and board. Included in the wood pulp production increase is the rise in rayon pulp production from 180 thousand to 638 thousand short tons. Total investment in the industry reportedly will amount to $3.4 billion by 1965 in the seven year period.

Text of talk delivered at Annual Open Meeting of the Export Committee, American Paper & Pulp Ass'n. February 23, 1960.

The Author

Program Expanded

It is believed that already this seven year program has been revised and expanded and that a substantially increased 15 year program through 1975 will take the place of the former short-term one. Paper and board data as set forth in the FAO September 1959 report indicates a 1975 demand of 12.4 metric tons or slightly more than double that of 1965. It can be therefore assumed that the new program will entail doubling Russia's paper and board production in the 1965-1975 period, since the demand figure for 1965 about equals proposed production for that year. As to relative per capita consumption it can be estimated to increase from approximately 32 lbs. in 1958 to 45-60 lbs. in 1965. The wide range for 1965 is purposely given with the thought in mind that ambitious goals are very often not met and may have to be extended a year or two for culmination.

The intensive modernization and construction program is under way in view of the major machinery and equipment purchases covered in the recent trade agreements with both Sweden and Finland. The former covering 1959-1961 includes $42 million of machinery and the latter 1960-1965, $75 million, both treaties also covering pulp mill installations and other industry equipment amounting to over a hundred million dollars. Equipment has also been contracted for in other countries.

A valid comparison can be made between Russia's projected 1965 paper and board production and that of the United States—6.9 million as against 45.1 million tons. For a comparative past year one would have to go back to 1919 and 1920 when U. S. production was 6.2 million and 7.6 million tons respectively. Of perhaps more significance in comparing the two industries in relation to serving the consumer public and comparing the standard of living would be the per capita paper consumption. The U.S.S.R. may attain 60 lbs. by 1965—the United States has already attained 58 pounds in 1899. Take last year, U. S. reached its highest consumption—439 per person—Russia

an estimated 33 lbs. Granted that our consumption will rise much slower in the years ahead, a 13 to 1 ratio is a very wide margin to overcome in a relatively short time, especially when all factors are taken into consideration.

Turn Imports On and Off

Now that the production facilities of the two countries have been put in proper perspective a look at the U.S.S.R.'s export and import picture over the past several years may shed some light on her intentions in the future.

"Statistics show a steadily increasing upward trend in [Russia's] exports while imports indicate a 'turning on and off' policy as dictated by what is considered suitable by the policy makers as negotiated in trade treaties."

"Of significance in comparing the two industries is that the U.S.S.R. may attain 60 lbs. per capita paper consumption by 1965—the United States had already attained 58 lbs. in 1899."

EXPORTS (Metric Tons)

	1958	1957	1956
Wood Pulp	219,000	151,000	145,800
Total Paper	92,700	85,000	75,700
Newsprint	74,000	69,700	60,900

IMPORTS (Metric Tons)

Wood Pulp	76,000	82,000	55,000
Total Paper	77,000	85,000	75,500
Newsprint	14,500	14,300	14,000

Source: Commercial Office U.S.S.R. Embassy, Washington, D.C.

The statistics show a steadily increasing upward trend in exports while imports indicate a "turning on and off" policy as dictated by what is considered suitable by the policy makers as negotiated in trade treaties.

Exports indicate a growing need for foreign exchange to help pay for industrial expansion, though it must be pointed out that in 1956 and 1957 about half of the exports went to satellite countries, the non-satellite purchasers being England, France, India, Egypt, and Iran. It can be concluded that as more foreign exchange is needed for additional machinery and equipment purchases abroad, specified and increasing quantities of wood pulp and newsprint would be offered for sale in world markets over the coming years. The Russians have stated they need all their pulp and paper/board production at home, but they forget to state openly that each industry requiring equipment from abroad must produce a certain portion of the foreign exchange necessary for those purchases. A portion of this earned exchange is placed in an all-industry pool, and then allocated as prescribed by goals set up in the various plans. Hence Russia's very marked interest in this lush pulp import market. Price is no object—foreign exchange is essential. Combine political factors with the aforementioned need and you could have the main purposes, perhaps the only two, of Russia's export policy.

To Increase P&P Exports?

Opinions have been expressed that five to seven years from now Russia would make a really determined effort to break into world markets with products of her pulp and paper industry. Considering the facts, it can be assumed that as her industry plans grow more ambitious, these ambitions will be reflected in sharply increased exports. Should Russia's meaningful threat as expressed by Khrushchev of overtaking U. S. production in all phases become reality, would it not be logical to take seriously the fact that that country's massive potential could mean problems earlier than anticipated, since her policies have usually been inimical to our country's interests!

SOVIET UNION
PRODUCTION OF PAPER BY GRADES
(1,000 metric tons)

	1940	1950	1953	1955	1956	1957	1958
PAPER—TOTAL	812	1,193	1,612	1,862	1,993	2,126	2,237
Newsprint					360.2	376.8	388.9
Duplicating	197.1	236.9	300.3	375.4	41.1	42.7	40.3
Printing		133.8	168.8	222.3	245.1	252.5	262.5
Offset	103.1	10.3	17.6	24.4	36.2	49.7	55.4
Super calendered		5.3	8.6	11.1	14.5	18.5	21.1
Lithographic	3.0	5.5	5.2	5.1	5.6	6.6	7.7
Poster and ticket	4.9	12.4	17.4	16.6	18.2	22.3	22.6
Writing*	116.4	139.7	210.4	172.1	184.5	198.0	216.4
Cover, for books and notebooks	22.2	27.1	34.1	33.8	37.0	37.4	36.9
Cartographic	7.2	8.4	9.6	10.7	11.0	11.9	12.1
Cable	3.6	7.8	9.3	11.8	12.3	16.2	17.2
Condenser	0.2	0.5	1.5	2.5	2.6	3.0	3.3
Waxing	2.0	3.3	6.5	8.1	9.7	10.4	10.3
Tabulating	3.6	3.5	5.8	7.2	7.1	9.0	8.6
Cigarette and tissue	3.8	2.9	4.3	5.0	5.3	6.0	6.9
Cigarette mouthpieces	26.8	34.6	38.7	42.8	44.1	48.6	48.1
Photographic	2.1	2.4	3.7	5.3	5.1	6.3	6.6
Spool	8.3	18.7	19.6	22.2	22.7	24.5	26.0
Wrapping and packing	150.1	262.2	359.1	404.8	368.3	356.9	361.3
Crepe	—	13.0	13.7	14.6	45.9	61.3	67.3
Bag	32.1	83.6	120.3	142.8	166.1	183.4	212.3

*White and colored, for envelopes, diagrams and notebooks.

Source: "National Economy of the U.S.S.R. for the Year 1958"

Materials Handling and the Materials Management Concept

Mr. Adams predicts that procurement, handling and distribution of materials will be placed under one roof. Called materials management, this concept is expected to receive considerable emphasis in the 60's.

Donald S. Adams,
Manager Materials Department,
Ohio Division,
Champion Paper and Fibre Co.,
Hamilton, Ohio

I am sure you all have the same difficulty that I do in trying to keep up with your reading. My wife and I recently discovered that we have some 30 magazines a month coming into our house. The problem of looking at the pictures, much less reading all the information contained therein, becomes quite an undertaking. However, in the few trade magazines which I do manage to fight my way through, it becomes very apparent that the materials management concept will be the big thing in the 60's, as materials handling was in the 50's. If you recall, during the 50's practically every magazine had an article on material handling and in many cases, had full issues devoted to this subject. 1960 is justifiably the decade for materials management, since there is much to be gained by a total look at the cost of materials procurement, handling, and distribution in the paper industry as in all other industries.

The Author

Materials Management Functions

How should the material management concept be organized in the paper making industry? Many people say that a sound material management program must start with scheduling of the production operation. They point out very justifiably that good purchasing can only be based on proper scheduling of engineering, maintenance and manufacturing requirements. I am sure that this approach will be debated very strongly by some people in the paper industry who feel that production management should be responsible for all scheduling. However, I think the day may come when we will see scheduling as a materials management function even in the paper industry. I think all of you will agree that there is a definite need in the paper industry for closer communications and coordination between scheduling and inventory control on purchasing of raw materials.

Paper manufacturing, traditionally considered an "art" rather than a science, is very susceptible to changes in furnish for the paper machines or in ingredients for coatings, on the basis of quality problems encountered in production. All too frequently these changes in manufacturing methods are made on the spot in the field and not transmitted to scheduling, inventory control and purchasing departments fast enough to make the proper adjustment in the purchasing of raw materials and/or manufacturing supplies. The results are obvious, either the production is held up because supplies are not available or excessive dollars are tied up in inventories because materials are not being consumed at the former rate.

Obviously, good control of inventory is completely dependent upon knowing not only the grades to be run, but the beater furnish and the formulation of coatings, sizings, and so forth. I don't believe there can be much argument that the problem of inventory control is logically a function of the materials management department.

The establishing of good inventory control over raw materials, manufacturing supplies, storeroom supplies and finished goods is essential to the economic life of any business. The high cost of borrowed money today, puts additional emphasis on the need for top-notch inventory control. Dollars released from inventory become working capital. Logically then, purchasing, as the next step of inventory control, falls

Presented before the APPA's Materials Committee meeting.

under the materials management function.

I don't think there is too much argument that receiving and warehousing of raw materials, usually designated in most paper mills as the unloading department, is a logical function of materials management. Also, the handling of in-process paper, particularly of rolls, usually called roll storage, is also a part of materials management. Continuing, we come to the handling, warehousing and shipping of finished goods, which again can very readily be acceptable as part of the materials function. In conjunction with this, the operation of the traffic department logically falls in the materials management field. This is true because of its very close tie-in with purchasing in the routing and freight charges for raw materials and also because of its very close tie-in with shipping in procuring the best possible distribution rates for finished goods. Traffic too, of course, ties into the problem of demurrage, which cost runs into five figures in many paper mills. The traffic department is a logical place to begin the problem of controlling these demurrage costs.

Also, I think in most industries the control of storeroom supplies is a function of the materials department, although, historically, in paper mills this has been a function of the maintenance department. The control of any inventory is better handled by somebody other than the personnel who are actually involved with the use of the materials. This is true of the raw materials supplies, where the control of inventory by operating departments tends to lead to over supply, since naturally it is the concern of operating supervision that at least an adequate supply be on hand at all times.

Who's Chief?

Who do we logically pick to head up the materials management organization? Here again, in the trade magazines that I read, there seems to be considerable conflict. All the purchasing publications, of course, feel that the purchasing agent is the one to be responsible for materials management. In a recent issue Dunn's Review had a special report to management on the "Integration of Transportation for Profit." In this they pointed out that traffic managers are the logical candidates for the materials management functions. They give as the justification for this, the fact that traffic managers have a knowledge of material handling principles, freight rates and distribution costs. As in the case of the purchasing agent, however I feel that this is only a part of the picture. Materials handling magazines get involved too; in the November 1959 issue of Modern Material Handling, there was an article entitled "Materials Management—Will The Handling Man Carry The Ball?" Although my background is in the material handling field, I do not necessarily feel that the material handling engineer is the man best qualified to handle the materials management.

Obviously, the man to fill this position is the man in your organization who is best qualified on the basis of background and potential. The man who should fill the materials management position in your organization obviously must be able to organize a fairly good sized department and keep it running. He must be open minded, and I think probably this is one of the biggest assets that he can have. If there is going to be anything in the materials management concept in the next ten to twenty years, it's going to be changed. Unless a man is willing to study to keep abreast of developments and accept new ideas and technical advances, he certainly is not the man you want in this position.

During the 60's we will see continued growth in the types of material handling equipment available; we will see new concepts in the techniques of purchasing and control of inventory. Many of these will involve electronic data processing, linear programming, and other programs of this kind. The materials manager in your organization has to be willing to not only accept but he has to embrace these ideas and be willing and able to use staff personnel to forward these concepts. As stated previously, American Management Association and other people seem to be pushing quite strongly for purchasing agents as managers of material handling. I have nothing against purchasing agents as a body. However, I do not think that any company can afford to overlook any phase of the total materials management problem if they are to successfully compete in today's market.

"Many people say that a sound material management program must start with scheduling of the production operation."

"During the 60's we will see continued growth in the types of material handling equipment available; we will see new concepts in the techniques of purchasing and control of inventory."

Need Handling Engineers

There is still a tremendous potential for material handling savings in the paper industry. I was interested in a recent issue of Factory Magazine to note that of 162 plants surveyed only 15 per cent had a handling engineer who was responsible for handling methods.

I feel very strongly that only with a full time materials handling engineer can industry do an adequate job in reducing handling costs. If you have a mill of over 300 employees, I would venture to say that you have room for a full time material handling engineer. While industrial engineers are certainly well qualified to study material handling problems, unless they are assigned full time. I don't think that you are getting your material handling job done.

First of all, most industrial engineers, unless they have specialized in the field, are not familiar enough with the many types of material handling equipment which are available today and will find it difficult to keep abreast with the tremendous strides being made in this area. Also, unless your industrial engineering department is different from most industrial engineering departments I have seen, an engineer assigned to material handling is doing it only on a part-time basis. About the time he gets well into a material handling program and begins to get it organized, some other crash program comes along which requires at least part of his time. Even if the industrial engineer has enough time to study and keep on top of all the methods problems which you have in your

plant, it is doubtful if he could put in enough time to adequately control preventive maintenance costs and equipment utilization.

We have found that the utilization of our material handling equipment runs about 35 per cent. Only in a few areas such as unloading docks and shipping docks is the utilization of the equipment in the range of 65 per cent. We are just about to install a dispatching and radio control system for handling equipment in Ohio Division. We have this in operation in our Carolina and Texas Divisions. We feel that after this system is installed, we should come up to 65 per cent to 75 per cent utilization on practically all of our equipment.

"Of 162 plants surveyed only 15 per cent had a handling engineer who was responsible for handling methods."

Cost Aspects

The control of preventive maintenance costs and the institution of a good sound equipment replacement policy are important aspects of the total material handling problem which are too frequently over-looked. The cost of maintenance of material handling equipment becomes an operating cost and too often is accepted as an unavoidable part of mechanized material handling. Actually, the total of depreciation and maintenance costs can be considerably cut by a good preventive maintenance program combined with a well planned replacement policy.

Part of the total material handling problem is, of course, the problem of distribution of finished goods. This is due to receive more and more emphasis in the next few years. Equipment to solve some of the complicated distribution problems is now becoming available. Probably the most important of these is the electrical data processing equipment which allows us to keep a more accurate control over inventory. With data processing, we can get practically instantaneous review of inventory position, manufacturing status of stock orders and order forecasts. This can result in reduction of total inventory which of course in turn results in the lowering of warehousing costs.

The transportation industry itself is going to be a big factor in the changes made in distribution in the next few years. Many technological changes are coming about in our transportation services; probably the three most important factors are improved equipment for damage reduction, containerization, and finally, higher speed transportation. The development of spring loaded couplers for railroad cars and the use of inflatable dunnage and inflatable bulkheads as well as the expanded use of damage free equipment, is bound to lead in the next few years to a considerable reduction in the terrific bill paid by the railroads and all industry for goods damaged in transit. The use of improved rail facilities and roller bearing cars, higher speed trains, piggy back principles, and containerization of all kinds of bulk materials also will lead to higher speed transportation.

Increase in Air Cargo

An increasingly important factor of course will be the use of airlines for carrying of freight and cargo. Developments in the loading of freight plane carriers will reduce the cost of this type of operation; these developments include the front opening cargo plane, the pop plane, and these cost reductions combined with the speed of delivery will be a factor in reducing inventory and altering distribution concepts. Consideration of all these factors add up to answer some of the questions such as, "Can we eliminate, or at least considerably reduce, the warehousing of finished goods?" Also we must ask the questions, "How many warehouses do we need, and where should they be located for most economic distribution of finished goods?" Linear programming will solve many of these kinds of problems. Many companies are finding that they are overwarehoused and that they are maintaining stocks in too many places in the country; again, as the speed of transport increases, this is going to be increasingly apparent to many companies. Combining with the factors mentioned above, will be increased speed in the receipt and handling of orders through communication developments and electronic processing or order typing and dispatching.

"Many technological changes are coming about in our transportation services; probably the three most important factors are improved equipment for damage reduction, containerization, and finally, higher speed transportation."

Public Warehousing?

Another question which many people are going to be asking themselves in the next few years is, "Should we go to public warehousing?" An old business axiom says "Specialties call for specialists", and warehousing is certainly a specialty. Today there are more than 4,000 public warehouses in the United States and they are all prepared to function as local distribution warehouses. For your company they provide office space for salesmen and will do all the work that you would do in a warehouse of your own, including warehousing, receiving, sorting, storing, order picking, order assembly, paper work, and shipping. In other words, they offer the advantages of wide flung warehousing system without the capital investment necessary to provide your own warehouse facilities.

Tieing in with the whole problem of distribution, of course, are warehouse principles themselves, which are due for a revamping in the very near future. We can already see the signs of this type of change in order picking techniques which allow faster and more economical order picking as well as automatic turnover of stock to follow the first-in, first-out principle. In conclusion, I certainly highly endorse the principles of the materials management concept, and we are making every effort to apply and expand them in our own company. I merely wish to point out again that we must not overlook any phase of this problem at the expense of others. Certainly the material handling aspects of the total materials management problem is one which will continue to require effort, ingenuity, and concentrated attention.

APA Examines All-Hardwood Newsprint

A process to manufacture newsprint wholly from Southern hardwoods and its international significance held the limelight at the Forest Policy Forum. This session launched the American Pulpwood Ass'n.'s 26th Annual Meeting, a three-day affair held at the Hotel Roosevelt.

The process, referred to as the Herty-Noralyn process, was developed at the Herty Foundation Laboratory, Savannah, Ga., for the Noralyn Paper Mills, Inc., Baton Rouge, La. Noralyn is presently building a mill that will utilize the new process.

The principal paper was presented by J. H. Ainsworth, vice president of the Noralyn Paper Mills. He felt the Herty-Noralyn process to be a significant technological breakthrough in the use of Southern hardwoods for newsprint. Mr. Ainsworth went on to predict a bright future for the worldwide use of the process, especially in the heavily forested areas of foreign countries where little else but hardwoods are available. Indirectly, widespread use of hardwoods could have great impact on the advancement of peoples in these countries, he added. This would help bring about a higher standard of living and increased education, Mr. Ainsworth concluded, which would lead to closer international understanding and aid in the search for peace in the world.

All phases of pulp and paper manufacture—woods, operating, technical, management—were represented at the well-attended forum. Disappointingly, Mr. Ainsworth's paper did not reveal facts, figures, or any details about the Herty-Noralyn process. His recondite discussion concerned itself principally with philosophical suppositions on how the process could conceivably raise the literacy rate in many areas of the world. Later questions from the floor were neatly parried with circumspect answers that revealed very little. Mr. Ainsworth, however, did infer that the Herty-Noralyn process would have yields higher than conventional groundwood, would produce a brighter pulp with standard bleaching processes, and would result in a stronger newsprint sheet even on the fastest machines in use today.

Participants in a panel discussion following Mr. Ainsworth's presentation were W. L. Belvin, director of the Herty Foundation; P. R. Wheeler, forest economist of the Southern Forest Experiment Station; and J. R. Owens, director of the Forest Products Division; Business and Defense Services Administration. George B. Amidon of the Minnesota and Ontario Paper Co. and president of the APA presided as meeting chairman.

Operations Research in Logging

Scientists and mathematicians may soon be playing a more important role in logging if the forest industry expects to meet increased competition. This forecast was made by L. J. Lussier, operations research director, Quebec North Shore Paper Co., Baie Comeau, Quebec, Canada. He spoke at the first Industry Session, chairmanned by D. E. Hess, of the Gladfelter Pulp Wood Co.

Dr. Lussier emphasized the need for a more systematic way of planning and controlling logging operations. Citing examples from his own company's operations in Northeastern Canada, Dr. Lussier illustrated the application of operations research techniques to solving some of the complex logging problems encountered. Operations research is a method of solving practical problems through formulae based on performance analysis of any given operation.

The next paper, by Commissioner H. G. Wilm of the New York State Conservation Dept., discussed the interlocking patterns of state and industrial forest land management in the Adirondacks. H. E. Ruark, director of the Georgia Forest Research Council, then emphasized the need for America's businessmen to assume an interest in the building and maintaining of adequate forest fire control programs. The final paper in the session coordinated forest management with wilderness areas and was presented by W. D. Hagenstein, executive vice president of the Industrial Forestry Ass'n.

Latest Logging Methods

The latest and most efficient pulpwood logging methods in the various forest regions of the U. S. were discussed at the second Industry Session. George W. Abel, director of technical forestry, Owens-Illinois Glass Co., Jacksonville, was moderator of the six-man panel. Panelists were APA's regional technical committee chairmen or vice-chairmen.

Reporting for the Appalachian region was R. F. Bower, Hammermill Paper Co.; Lake States region, F. N. Fixmer, Mosinee Paper Mills; Northeast, G. A. Pesez, International Paper Co., Glens Falls, N. Y.

Reporting for the Southeast was H. H. Flickinger, International Paper Co., Georgetown, S. C.; Southwest, S. K. Hudson, Container Corp. of America; Far West, R. L. DeLong, St. Regis Paper Co., Tacoma, Wash.

New Officers

At its annual members meeting on Wednesday, D. E. Hess was elected as the next president of the association. Mr. Hess, vice president and general manager of The Glatfelter Pulp Wood Co., a subsidiary of the P. H. Glatfelter Paper Co., is the 12th president of APA since the association was organized in 1934.

The following officers were also elected: A. G. Curtis, Bogalusa Div., Crown Zellerbach Corp., and L. J. Kugelman, International Paper Co., vice presidents; W. S. Bromley, executive secretary and treasurer; J. D. Keith, assistant treasurer.

Past Presidents Honored

Past presidents of the American Pulpwood Ass'n. were accorded special honors at the president's reception and annual dinner held Tuesday evening. Those honored were: J. H. Hinman, chairman of the board, International Paper Co.; K. A. Swenning, woodlands manager, Scott Paper Co.; C. M. Hutchins, president, St. Croix Paper Co.; F. A. Kelly, Northwest Paper Co. (ret.); J. E. McCaffrey, vice president, International Paper Co.; E. O. Ehrhart, New York & Pennsylvania Co. (ret); L. J. Freedman, Penobscot Chemical Fibre Co. (ret.); and L. A. Whittle, woodlands division manager, Brunswick Pulp & Paper Co.

Speaker at Tuesday's annual luncheon was Robert D. Gidel, chief of the Division of Safety Standards and Services, Bureau of Labor Statistics, U. S. Dept. of Labor. His address was concerned with "The Personal Touch in Woods Safety."

Opportunities and Pitfalls Of Research in Paper

The breeding of trees without bark or lignin to produce fibers for paper "should not prove impossible," says Dr. Nissan as he challenges the paper industry to open up new areas of research.

Dr. Alfred H. Nissan,
Research Professor,
Department of Chemical Engineering,
Rensselaer Polytechnic Institute

Every trade has its risks, every profession its hazards. Professors are subject to the same rules. They suffer from three particularly "professorial" hazards.

The first and most prevalent is that a professor will talk for 50 minutes on any subject you care to mention—no more no less. Whether you ask him if it is going to rain tonight, or his opinion on the everlasting verities of creation, you can sit back and time him with a stop watch. He will start talking and 50 minutes later, he will stop in mid-sentence, wake up, look at his watch and say, "Dear me!" Scientists believe it has something to do with the ticking mechanism of the brain conditioned by a lifetime of 50-minute classes. The second hazard is that professors *will* talk of matters other than those they profess. This is due to what they believe to be a spirit of adventure. Thirdly, professors *will* tell industry what a mess it is making of itself with the general air that, had industrialists only been wise enough to call in the professors to manage everything — why, industry might have turned out to be as perfectly run, enlightened, progressive, efficient and productive as all university departments are implied to be. This, psychiatrists believe, is due to a twisted sense of mission.

If these are your thoughts, and I do not blame you if they are, you will also be bracing yourself for one more diatribe against all the sins of commission and of omission of industrial research to be listed by yet another member of academia. The title mentions "Opportunities of Research in Paper" but probably you are already certain that I shall only speak of *missed* opportunities of research in paper. I said I would not blame you for having such thoughts and I do not. But I would make two reservations.

In the first place, I am a research professor. So, I will be talking about that which I profess. In the second place, though I do not think the paper industry is doing all it can or should in research, I hope I am not one of those who belittle its efforts or besmirch its name. Indeed, when I hear some Jeremiah bewailing the shortcomings of the industry, prophesying creeping obsolescence and slow decay, for lack of "true" research, I am reminded of an incident of some twenty years ago. Apparently, after Hitler had devastated Poland, submerged the Low Countries and subjugated France, he gave it as his considered opinion that "England was just a chicken with its neck ready to be wrung." This came to the ears of Mr. Winston Churchill who, being a good parliamentarian, dutifully reported it to the House of Commons. "But," growled the old Warrior, as if to himself, "Some chicken! Some neck!" And so would I also echo Sir Winston, when detractors—and there are some—have nothing but criticism and foreboding of doom for the art and science of paper making—and murmur, "Some chicken! Some neck!"

Therefore, let us, you and I, reject such preconceptions and address ourselves to evaluating both the strengths and weaknesses of research in paper. This is going to be difficult —for, how can we escape from ourselves? How can we examine our own industry which is the sum total of ourselves, our work, our interests and aspirations without strong emotional bias either toward deceptive optimism or destructive pessimism? Yet if the industry, or each company in it, is to prosper, the task must be done; the task of every once in a while standing back and having a steady and critical look at our past score—counting both our hits and misses impartially, as well as those occasions when we did not even bother to take aim— and then projecting our thoughts forward so that we may better adjust our sights on the next target with a greater chance of success.

The Look Back

To evaluate the achievement of the industry in the past, one must of necessity look at its records qualitatively and quantitatively. This means looking up and reporting to you a host of statistics. But you, gentlemen, know more statistics about the industry than I can ever learn. Indeed, I would have to come to you for them. If you bear with me I should like to mention just a few selected figures as they show the determination of the industry to open up new horizons in production, of developing new materials and of new processes.

It is now traditional that the industry should produce 3 to 4 per cent more paper and paperboard each

Presented at the APPA's Open Industry Meeting.

year over the previous one. The first nine months of 1959 showed an increase of 12.4 per cent over the same period in 1958. This implies a vast program of reinvestment in new plant and equipment—some $828,000,000 being estimated for 1960, an increase of 35 per cent over 1959. These figures would not be relevant to our present discussion except for the observed correlation between the rise in productivity—output per man-hour—and annual expenditure on new plant and equipment. Thus, the average level of output per man-hour steadily rose from 1948, in step with capital investment until it was 57 per cent more in 1959 than in 1948. While such bare facts must be the results of a host of different causes, I believe they indicate a desire and a willingness on the part of industry to invest in new and modern technology. This conclusion receives support from the estimated expenditures on research: $28 million in 1953; $44 million in 1956 and $50 million in 1957. It is believed that $1 million was spent in 1957 on "basic" research.

These are large and generalized figures for the whole industry. It is difficult to grasp their significance. Let me give you figures for one paper company so that we can come down to specific cases. Once again, however, we find gigantic sums. Over $22.5 million was spent by this company in 1959 on capital expenditure. The total capital expenditure since the end of the second world war soared to $230,000,000—this, remember, is by one company. Total capital investment in research and development facilities in 1959 was some $2.5 million. Research expenditure in 1959 was $3.5 million—283 per cent over 1950. Scientists employed on Research and Development in this company totaled 300 in 1959—some 80 per cent increase over 1950. What is more significant is that the ratio of higher qualification shows a steady increase.

These, gentlemen, are the bare necessities of research — money, equipment and most important of all, men and women. To equip for research and spend money on it does not necessarily mean achieving significant results. Have we any yardsticks for achievement?

"An attempt to breed trees primarily to produce fibers for paper with neither bark nor lignin should not prove impossible. There will be a host of problems to solve—but one certain way of not being able to solve them is not to try."

The company I quoted reported that over 15 per cent of all its sales in 1959 was of products which were not in existence five years ago. This, gentlemen, is achievement. I am fairly confident that other companies in the industry can point to similar achievements in one field or another with just pride. Thus, taking the industry as a whole, 10 years ago hardwoods were of secondary significance in pulping for paper; today they are of major importance. Not only that, but high-yield semi continuous or continuous pulping processes have become established in the last decade. A greater amount of recovery of chemicals and of other utilization of by-products and once-wasted products is the order of the day. Paper machines have surpassed the 2,000 f.p.m. mark on regular basis-weight grades without loss—indeed with some improvement—in overall qualities. New understanding of the fluid mechanics of the stock in pipes, in the headbox, over the wire, in table roll nips, and in the recirculating system has filled scientific journals with precise quantitative analyses. New theories and practices in drying of paper have improved both rate and control of this vital operation. Novel coating techniques and other treatments of paper have appeared on the scene. And as a final example, a truly revolutionary idea—extensible precompacted paper—has introduced a new dimension into our concepts of the mechanical properties and uses of paper.

"Even greater growth in the future can be realized if the industry branches out into unexplored and revolutionary areas of science and research."

These are some of the high peaks which I picked out at random from the range of scientific and technical achievements by the industry. You are better acquainted with what has been done than I, and I need not elaborate further the impressive record. But I do want to ask the question, "Have we missed on anything?"

Surprising as it may sound after my enthusiastic recital, I believe we have. I believe, we have one major shortcoming. In most of the researches carried out, we have, on the whole, simply extended a line in its own direction—we have not branched out or reversed along a different track often enough. Let me illustrate this point.

The pulping of wood is now some 80 to 90 years old. In all our chemical processes—and very great feats have been performed over the years—we take a log, break it up mechanically, then remove the lignin and other undesirable materials by dissolution, leaving a more or less pure cellulose fiber. Now this industry may be considered in a certain sense as that of tree farming. Some studies and experiments on tree breeding have been done—but I know of no purposeful and systematic effort to breed a lignin-free tree. This idea may appear so unnatural to the structure of trees, that it will sound fantastic. Yet, I must remind you that a more intrinsically fantastic attempt has succeeded. The primary purpose of all living things appears to be the perpetuation of the species. Thus the primary natural function of all trees seems to be the production of the seed. When man decided to breed seedless fruits—be they grapes or oranges—they were indeed attempting the ultimate enslavement of organic nature. This they tried to do and they succeeded in doing. After this, I believe an attempt to breed trees primarily to produce fibers for paper with neither bark nor lignin should not prove impossible. To be sure, there will be a host of problems to solve—one certain way of not being able to solve them is not to try.

The fact that we have to dissolve the encrustants and utilize the fiber afterwards sets severe limitations on how roughly we can handle the chip of wood. If we reserved the process and dissolved the cellulose to regenerate it free from encrustants, we could utilize sawdust with impunity. This would also afford us the opportunity of completely continuous, fast and controllable pulping operations.

Again, although we have amassed

a vast fund of information on the chemistry and physics of lignin, we still find that the greatest use we can put it to, in bulk, is to burn it. I think our greatest handicap here is that we do not know its structure. When we realize that the structure of insulin and similarly very complex organic molecules has been fully worked out, the gap in our knowledge becomes emphasized.

Similarly, the paper machine has been improved along a line with very few branching-out steps. If I tell you that the drawings of Roberts' early crude machine of 1799 had a head box, a continuous wire on rolls, and rudimentary recirculating system, you can see what I mean. The early cylinder machine by Dickinson, patented in 1809, also had the basic essentials of a modern vat machine. Drying cylinders were invented in 1820 by Crompton, and their improvement in 1856 by Ranson made the paper machine look like our modern machines except for size, speed and complications. These are not minor improvements—they are indeed giant steps forward—but they are steps along the same direction as charted over 100 years ago. For comparison, let us consider two other machines as they have developed: today's turbo jet engines may be compared with the early diesel and gasoline engines—their direct predecessors of yesterday. Today's engine is not simply bigger, faster or more economical in fuel—it uses a different principle. Or compare a modern digital computer with an adding machine—again, it is not simply larger, faster and more sophisticated and efficient; it uses a different principle. This, I believe, is the essential weakness in the research effort of the paper industry: with a few noteworthy exceptions, research in pulp and paper tends to proceed along a nearly straight line instead of branching out.

The Look Forward

Having allowed me to go so far, you will perhaps allow me to give you what I believe to be the reasons for what I described as our major shortcoming in paper research. I think that many of you will disagree with me more or less violently, but if I start you thinking about these matters seriously, and particularly if I cause you to act—I shall have fulfilled my duty.

I believe that there are many reasons, but chief amongst them are three:

1. Intellectual isolation.
2. Lack of faith in basic approaches to our problems.
3. Consequentially to the first two reasons, relative paucity of revolutionarily minded scientists in the industry.

Let us look at each of these with the hope of prescribing remedies and not simply to make a debating point.

"Textbooks used in science courses of our colleges and universities carry little mention of processes and problems encountered in pulp and paper technology. This lack is due to the tendency of people in the industry to talk only to each other."

Intellectual Isolation

Take any book on physics, chemistry, mathematics, fluid mechanics, thermodynamics, theory of machines, or any other subject which is treated by the author in a general manner, though in depth. You will find that examples are taken from the metallurgical, petroleum, chemical, or electronic industries; machinery and special problems with basic significance to the science are analyzed, their problems discussed and solved. But not paper problems. The hydrodynamics of the fourdrinier or of the press are no less complex, or significant to fluid mechanics than the flow of air over a wing; they are not discussed. Heat and mass transfer in the drying section of a paper machine are not mentioned anywhere; heat flow across a furnace wall or a car-engine shaft is.

Let us go further back into the sources of textbooks—the journals of the learned societies recording the results of live research in these basic fields. Again the same pattern. Problems of other industries—of no less specialization than paper—are presented in generalized forms and solved as part of pure or applied science. Publications from the paper industry are either scarce or absent. Or again, let us attend the meetings of these societies—unless a talk is being delivered on a specialized paper-subject, one misses one's friends in the industry.

Where are our scientists and our publications? They are very properly delivering papers and attending discussions within our own societies. This, I believe, is a most essential function and I hope I shall not be misunderstood or misquoted on this matter. No greater damage to the cause of paper research could be inflicted than a reduction in these meetings or publications in our specialized journals. What I think is necessary is not a reduction in our own meetings and publications but a positive and phenomenal increase in our contribution to the fund of general knowledge. I believe we should ask every scientist in our laboratories to summarize the mathematics, the physical or chemical laws he has discovered and to try to publish his findings both in our own journals and (perhaps in a different form) in one of the journals devoted to the pure and applied sciences. Duplication of effort? Of course. Too many papers already? Perhaps, but not enough from scientists in the paper industry towards science and engineering. You may ask what do I expect from this. I expect that young brilliant men of science may begin to be interested in our problems even if they are not in our industry. I expect university professors to use such research papers in their lecture notes and eventually in their textbooks. I also expect them to initiate researches in the universities on these problems. Just contemplate how much free research of a high order is available to the petroleum industry because chemical engineering professors everywhere concern themselves with equilibria of hydro-carbons, with distillation problems, with flow in porous media like sand, with fluidization. Not all this is sponsored research; many are thesis work by Ph.D. students on public money like N.S.F. grants.

In short, we talk in the paper industry to each other. We know each other too well—hence, there are no roaring controversies, no crucial points of disagreement. There is a freemasonry of paper scientists to which it is most pleasant to belong. But by the same token we get inbreeding of our ideas, as we make the circuit of visiting each other every year. We must break out into the wider and more challenging world of general science and engineering—

with the hope that this outer world will begin to look at our work and criticize it. I would ask every vice-president of research to put a high value on the successful attempt to publish in scientific and engineering journals of the outside world—but please do not stop the circulation of ideas within our own industry. By breaking down this intellectual isolation we find ourselves in, we can hope that once in a while a breakthrough is achieved away from the strait and narrow path we tend to follow.

Lack of Faith in Basic Approaches

I must clear up one misunderstanding here before I go on. I am not talking of doing "basic" or "fundamental" research in science or engineering within the industry. Frankly, I do not think we are equipped to do it. What I am talking about is to use the methods of fundamental research in tackling our problems. That is to say the quantitative approach vs the qualitative, the verifiable theory built up into measurable mathematically predictable observations, instead of the wordy, picturesque, plausible speculation based on partly qualitative observations and partly question-begging generalizations. This is what I am calling the fundamental approach. It demands greater discipline, greater depth of knowledge, greater persistence and generally more effort. Its results should also be of greater value in uncovering the unexpected. Now, most of the people I talk to assure me that this search for excellence is precisely what they would support. But not much actual support is given—demands for quick workable answers of necessity discourage the research worker from plunging into levels from which the results are unpredictable.

The interaction between the two factors I mentioned, intellectual isolation and lack of faith in basic approaches—is extremely strong. If the senior people who control the expenditure of money on research are consistently demanding short term methods, this in itself produces intellectual isolation from the vast stream of scientific effort into problems at deeper levels outside the industry. Vice versa, intellectual isolation produces inbreeding of ideas, molding new recruits to the short term patterns of their seniors, so that in turn they grow up themselves to demand quick returns by the ad hoc methods they know. The system is self perpetuating. Furthermore, it leads to the third cause of our major shortcoming which, in turn, further strengthens the status quo.

Relative Paucity of Revolutionarily-Minded Scientists

I left this factor until last for two reasons. It is ultimately the most crucial of the three causes of what I termed our major shortcoming. Secondly, if we can solve it, and bring in such men to the industry I believe our industry will take a leap forward in the near and distant future which will make the exciting progress the industry has made in the past look like that of the schoolboy in Shakespeare, "with his satchel and shining morning face, creeping like snail unwillingly to school."

I shall not try to argue that we are short of radical, revolutionary ideas. Even if you believe that we have many young men with such ideas, I trust you will agree we can not have too many of them. If any present here does not agree, if he thinks that we can have too many brilliant ideas for the progress of the industry, I suggest we have a private talk together later.

Instead, I shall address myself to how we can secure more of such people to work with us or for us.

"The quantitative approach often suffers from the need for immediate solutions based on qualitative observations which preclude opportunities to come up with the unexpected."

Straightway let us disabuse our minds about one matter — salary. While paying too little for too long will lose us the opportunity of securing the services of such people, let no man think we can buy them at so many dollars a man. I believe that the industry is most probably paying the average salary being paid by other industries who are finding it easier to secure men of brilliance. In my view money is not the root cause.

Let me tell you what I think is happening. Figures are persistently informing us that the young men and women of the nation prefer to study science rather than engineering science, and engineering science rather than craft engineering and technology, that is to say pure science in preference to applied science, and applied science in preference to technology. This last remark may not be fully appreciated until it is understood that most if not all progressive unversities and schools of the nation who teach engineering are moving fast towards teaching engineering science and leaving out old-fashioned descriptive craft-type courses from their syllabuses. Despite this move towards engineering science, however, young men and women are still showing a tendency towards the purer sciences in these same progressive universties and institutes. Not only that, there is some suggestion that the sciences are attracting, on average, the higher quality man. Now you can work it out for yourself: if a majority of the first quality men and women choose the sciences, and if the first rank of the remaining number who in the first place elect engineering, choose to follow an engineering science type of activity, there remain those who are satisfied with the more practical type of activity. Among these, there will still be some very brilliant men of the highest quality but who are practically rather than theoretically inclined—but their very brilliance will cause them to gravitate to where brilliant men of other disciplines—the scientists and engineering scientists of the first rank—have gone. Thus, the industries who offer the challenge to the pure scientists not only secure them, but with them they attract the first and second ranks of applied science and practical engineering disciplines. Then come the craft industries—fighting for their share of the national wealth of brain power.

It is clear that it is not a case of how to increase our pace to get amongst the winners in this jet age —rather, it is a case of learning to fly in order to enter the race in the first place. That is why I do not think money, by itself, would solve our problem—we have to attract those whom we wish to be our pilots to the negotiating table first before we can even begin to discuss terms or plan our strategy. And we cannot do that if our sole interest is to run in our groove on earth, when their gaze is on the stars.

How shall we do it then? I know of no other way than to hitch our wagon to the stars, too. I have already given what I believe are our chief handicaps, intellectual isolation and lack of faith in the fundamental approach. Remove these and we shall break out into the wider universe of

science and scientists, teeming with revolutionary ideas and radical innovations. The two factors go hand in hand with each other—no amount of lip service to the cause of pioneering research will do us any good if we lack the faith. For at the crucial moment when we have to authorize money or allow a man to leap for the moon without any assurance of ever reaching it we shall inevitably discover urgent, pressing reasons why he should once again survey his grounds first, where the humdrum light of day gives us more assurance of smaller finds. "A bird in the hand . . ., you know," we quote ponderously. "Of course," we sigh, "we must one day really take off"—but somehow, that day is never today.

If we have faith, then we shall fight for our faith. Money and time will be found for those capable amongst us to enter the wider scientific arenas and test their intellectual strengths with all comers. Then young, brilliant scientists of potential world stature will themselves feel the urge to pit their strength against ours and to test their brains on our problems. We shall not need to organize for presenting college professors with solved problems from our industry in their classes. They will seek the problems and solve them for us—what is more they will most probably discover problems for us which we never knew existed. They will ask new questions. And it is in the unexpected questions that the great revolutionary discoveries and inventions lie.

Conclusions

To summarize: The industry is investing willingly in a large amount of research. Past achievements give just cause for pride. This, however, is never cause enough for satisfaction: satisfaction leads too often to the first step of retreat. If we are to increase the pace forward, we have to look at what has limited our progress in the past, no matter how fast it was. We find three interconnected links in a chain which has kept us shackled to the ground: intellectual isolation, lack of faith in the fundamental approach to our problems and paucity of revolutionarily-minded young scientists among us. It turns out also that each of the three factors is in itself a cause for the other two; they are self-perpetuating. To soar, we must break all three links. Removing only one will not give us what we seek; the remaining two will soon regenerate the third.

The solution lies on your hands and hearts.

Unbleached Kraft Paper Review—1959

S. D. Fleet,
President,
Kraft Paper Association, Inc.

Unbleached kraft paper manufacturers entered 1959 with confidence. They had witnessed a turnabout and recovery in their business in 1958 and foresaw continued improvement in the new year. Their confidence was justified and their forecast fulfilled, for 1959 proved to be the highest volume year in the industry's history totaling approximately 2,900,000 tons, a 10 per cent increase over 1958 and 25,000 tons more than the previous record year of 1956.

Despite the high record volume of business which was established during the year, 1959 unfortunately was not as prosperous as the record tonnage would lead one to believe. During 1959, the capacity for manufacture of unbleached kraft paper was further increased by the addition of one new machine and as the year progressed competition became keener not only in the base paper but in the products converted from unbleached kraft paper. Costs continued to increase and, as the year ended, there was a certain amount of truth in the commonly bruited phrase "profitless prosperity" as applied to our particular industry. A continued rise in costs is indicated in 1960 and it would appear reasonable to expect that manufacturers will endeavor to recover at least these cost increases.

Developments in 1959

As we look back upon 1959, we should pay special attention to two developments which could do much for our future welfare. These were the spreading production of extensible paper and the formation of the European Common Market. Often we fail to evaluate happenings of this kind while they are actually occurring.

Extensible kraft paper became a fact in 1958. It was then produced on one machine by one company in experimental quantities. However, by the end of 1959 extensible kraft paper was being made by 9 companies here and by 2 in Canada on some 13 paper machines. Should extensibility become more generally accepted as a desirable kraft paper characteristic, and I personally believe that it will, more kraft companies will equip themselves to make it. In my opinion, the potentials for new kraft paper markets that this characteristic offers have not been scratched.

Common Market

The agreements making the European Common Market a fact became effective a year ago January. This was the spark which ignited a tremendous economic development throughout the six Common Market countries. That, plus the formation of the Outer Seven that followed should bring about an unprecedented economic surge—which means more packaging and more kraft paper demand. North America and Scandinavia are the main sources of that paper. Sales of American kraft paper either directly through sales to Europe or indirectly through sales to other parts of the world which Scandinavia can no longer supply, should gain substantially.

Future Outlook

Economists greeted 1960 with all kinds of favorable forecasts. The new decade was called the "Soaring Sixties," and the forecasters' optimism apparently knew no bounds. This enthusiasm has already cooled somewhat although the new decade is less than two months old. Steel inventories are rebuilding fast, the new small American cars have lost their novelty and with a Presidential election in the offing we are beginning to worry about what the poiticians will think of next. What then will 1960 hold for business? This is anyone's guess. It always is, but kraft paper is not a volatile commodity. As a service product, its future can be estimated with more accuracy than many others. It would be my forecast that in 1960 the industry will ship just slightly less than 3,000,000 tons of unbleached kraft paper. Although this will be only a one to two per cent improvement over 1959, it will be a new high record for the industry.

1959 Capacity Was 40 Million Tons, Joint APPA and NPA Survey Reveals

Benjamin Slatin,
Economist, APPA

The survey of paper and paperboard capacity of types conducted jointly by the American Paper and Pulp Ass'n. and the National Paperboard Ass'n. showed total paper and paperboard capacity as of the end of 1959 at 118,770 tons per day. In terms of the historic 310—313 days per year of operation, this rate was equivalent to an annual productive capacity of 37.3 million tons. In terms of the maximum volume of paper and paperboard that could be produced with this capacity, allowing only for usual annual repair down time and restrictions of union contracts for holidays and other reasons, the annual capacity as of the end of 1959 amounted to 40.0 million tons.

The data from this survey were compiled from responses to questionnaires sent to all known producers of paper and paperboard in the United States. Nearly all companies responded to the questionnaire. Capacity estimates for those few companies that did not respond were computed in part from aggregate information on production furnished by the Bureau of Census and in part from capacity estimates compiled from other authoritative sources. Data on newsprint capacity, printing paper capacity, fine paper, coarse paper and tissue represent 100 per cent coverage. Capacity for special industrial papers and absorbent papers represent something over 98 per cent coverage. Coverage of wet machine board and building paper was well over 80 per cent.

Estimates to the End of 1962

The survey showed that capacity per day of paper and paperboard would expand by 10,480 tons daily from the end of 1959 to the end of 1962, so that capacity as of the end of 1962 would reach 129,250 tons per day. Most of the expansion is likely to take place in paperboard capacity, where the increase on a per day basis is expected to total 6,420 tons. Paper capacity per day is expected to rise by 3,480 tons, while the total of wet machine board and construction paper and board capacity is scheduled to rise by 580 tons per day. Expressed in terms of maximum capacity, this amounts to a total gain of 3.6 million tons for total paper and board during the years 1960, 1961 and 1962, distributed as follows: 1.2 million tons for paper; 2.2 million tons for paperboard; and 180,000 tons for construction paper and board and wet machine board.

The Author

The increase in paper capacities scheduled for 1960 is about 3.8 per cent; in board 3.9 per cent. In 1961 paper capacity is scheduled to expand by an additional 2.8 per cent, while board capacity rises by 6.0 per cent. Most of the increases in board capacity will be centered in containerboard and special food board—the two fast-growing sectors of board demand.

On a tonnage basis, the largest increase in new machine capacity among the paper grades is expected in the coarse paper field, with additions to fine paper in second place. On a percentage basis, the largest increases in capacity during the next three years are expected to come in the fine paper field.

Speed up in Plans Possible

The forecasts of paper and board capacity are compiled from the stated plans of each of the companies that respond to the APPA-NPA capacity survey. In view of the time required to construct a paper or paperboard mill, the expansions in capacity indicated for 1960 and 1961 probably represent an accurate appraisal of the actual capacity likely to come in. Plans for 1962, however, are probably not completely established and may, therefore, deviate somewhat from the final figures. Experience with surveys of this type also shows that the rate of new capacity put in place is affected by business conditions. Thus, any slowdown in demand during, say, 1961 could very well lead to a stretch-out in the rate of capacity put in place. Similarly, a quickening of demand between now and the end of 1961 could well lead to a speed-up in the rate of completion of present expansion plans.

Improvements and New Machines

The survey asked the paper and board producers to distinguish between new capacity coming in as a result of new machines and new capacity stemming from improvements. The 3.6 million ton addition to capacity (on a maximum basis) indicated for the 1960-1962 period reflects capacity of 2.8 million tons from new machines and 0.8 million tons from improvements of existing machines. Among the different grades, 71 per cent of the expansion in paper capacity will reflect the addition of new machines, as will 79 per cent of the paperboard expansion and 81 per cent of the expansion in construction paper and board and wet machine board.

This report was submitted to the APPA Executive Committee and Board of Governors in connection with this year's joint annual survey of paper and paperboard capacity by types conducted by the APPA and the National Paperboard Ass'n.

J. R. Lientz
President

H. M. Annis
Vice President

John M. McEwen
Executive Committee

Well-Attended TAPPI Meeting Discusses Wide Range of Topics

Improvements in both research tools and applications, and significant developments in new paper and paper products were main topics of interest at the 45th annual meeting of the Technical Association of the Pulp and Paper Industry.

Some 2966 national and international technical and operating persons converged on New York City's Hotel Commodore during "Paper Week," February 22-25, to attend 30 sessions and panel discussions, 70 technical committee meetings, and TAPPI executive groups. Ninety-nine technical papers were presented. As in past years, the majority of these, 38, were read by supplier industries, with pulp and paper personnel reading another thirty-one. The remaining papers, 27, originated from educational and research institutions and federal agencies. A quick count of the attendance list indicates that 40 per cent were pulp and paper personnel, and 50 per cent were supplier representatives. Consultants, educators, etc. comprised the miscellaneous 10 per cent.

Highlights of the most interesting papers, events and meetings are summarized on the following pages.

New Executive Committee Members

The election of new TAPPI officers by secret letter ballot was announced to the membership at the annual meeting.

James R. Lientz, vice president, Union Bag-Camp Paper Co., Savannah, Ga., was re-elected to serve as president of TAPPI, until February 1961, having served in this capacity during the previous year. Also re-elected for another year was the TAPPI vice president, Harold M. Annis, vice president in charge of research, Oxford Paper Co., New York, N. Y.

The newly elected Executive Committee members, serving three year terms, through 1963, are:

John M. McEwen, Pulp Division, Weyerhaeuser Timber Co., Everett, Wash.;

Dr. Alfred H. Nadelman, professor and head, Department of Paper Technology, Western Michigan University, Kalamazoo, Mich.;

Kenneth D. Running, pulp mill superintendent, Halifax Paper Co., Roanoke Rapids, N. C.; and

Horace A. Spencer, director of research, Knowlton Bros., Watertown, N. Y.

David Wetherhorn
Chairman
Alkaline Pulping Committee

The retiring Executive Committee members are:

Ben T. Briggs, research manager, Olympic Research Division, Rayonier, Inc., Shelton, Wash.;

Kenneth G. Chesley, director of research, The Crossett Co., Crossett, Ark.;

J. R. Curtis, director of operations research, Scott Paper Co., Chester, Pa., and

John P. Weidner, assistant technical director, Container Corp. of America, Brewton, Ala.

Honor Retiring Chairmen

Several retiring technical committee and division chairmen were honored with Certificates of Appreciation during the Annual Meeting.

The recipients of these Certificates were:

Dr. Philip N. Joranson, research associate, The Institute of Paper Chemistry, Appleton, Wis., who served as chairman, Forest Biology Committee, from 1957-1960;

John K. Kirkpatrick, assistant groundwood mill superintendent, Bowaters Southern Paper Corp., Calhoun, Tenn.—chairman, Mechanical Pulping Committee, 1958-1959;

Joseph T. Loomer, manager of sales, Continental Can Co., Inc., Robert Gair Products Group, New York, N. Y.—chairman, coating Committee, 1959-1960;

Malcolm B. Pineo, technical Director, Brunswick Pulp & Paper Co.,

A. H. Nadelman
Executive Committee

K. D. Running
Executive Committee

H. A. Spencer
Executive Committee

Brunswick, Ga. — chairman Pulp Manufacture Division, 1957-1960;

LaFayette Price, paper chemist, U. S. Government Printing Office, Washington, D. C.—chairman, Paper Testing Committee, 1955-1960;

Dr. Herbert A. Smith, technical director, Technical Service Department, Mead Corp., Chillicothe, Ohio —chairman, Pulp Testing Committee, 1957-1959; and

Robert C. Sturken, vice president and treasurer, Frank W. Egan Co., Somerville, N. J.—chairman, Converting and Consuming Division, 1958-1960.

New Committee Chairmen Announced

The appointment of eight new Technical Division and Technical Committee chairmen was announced. The new chairmen, appointed by James R. Lientz, president of TAPPI, are listed as follows:

John C. Cousins, chemist, Sulphite Division, Penobscot Chemical Fibre Co., Great Works, Mains—Chairman, Pulp Testing Committee;

William P. Dohne, paper chemist, Dixie Cup Co., Easton, Pa.—chairman, Paper Testing Committee;

Dr. John N. McGovern, process engineer, Parsons & Whittemore, Inc., New York, N. Y.—chairman, Pulp Manufacture Division;

S. R. Parsons, research supervitor, Technical Department, Consolidated Water Power & Paper Co., Wisconsin Rapids, Wis.—chairman, Mechanical Pulping Committee;

Dr. J. C. Pullman, manager, Technical Service, Petrochemicals Department, American Cyanamid Co., New York, N. Y.—chairman, Converting and Consuming Division;

D. D. Stevenson, Buckeye Cellulose Corp., Foley, Fla.—chairman, Forest Biology Committee;

Jack E. Wilber, director, Technical Services, St. Regis Paper Co., Deferiet, N. Y.—chairman, Coating Committee; and

David Wetherhorn, project engineer, Southern Paper board Corp., Port Wentworth, Ga.—chairman, Alkaline Pulping Committee.

Medal Award to L. E. Wise

The highlight of the TAPPI Official Luncheon was the presentation of the 1960 TAPPI Medal. The Medal's recipient was Dr. Louis Elseberg Wise, senior research associate, The Institute of Paper Chemistry, Appleton, Wis. The Medal was presented to Dr. Wise by Dr. Harry F. Lewis, vice-president, The Institute of Paper Chemistry.

Dr. Wise is a native of New York, born in 1888, with A.B. and Ph.D. degrees from Columbia University. His background in the industry consists of many years of technical work in a number of companies and research organizations. He also contributed greatly to the industry's educational work and has published more than 127 papers and books.

Engage Professional Counsel

The Executive Committe of TAPPI approved the appointment of Fuller, Miele, Inc., New York, N. Y., as professional counsel to conduct a continuing member relations and information program for the association.

This is the same organization which handled publicity activities for the 1959 Fall Conferences, and wrote and produced TAPPI's recently published career brochure. Currently, on a special contract, they were also responsible for press coverage of the Annual Meeting.

L. E. Wise

Retiring TAPPI chairmen receive certificates. From left are LaFayette Price, U. S. Government Printing Office, Paper Testing Committee; R. C. Sturken, Frank W. Egan Co., Converting and Consuming Division; J. R. Lientz, president of TAPPI; J. K. Kirkpatrick, Bowaters Southern Paper Corp., Mechanical Pulping Committee; Dr. H. A. Smith, Mead Corp., Pulp Testing Committee; J. T. Loomer, Continental Can Co., Coating Committee.

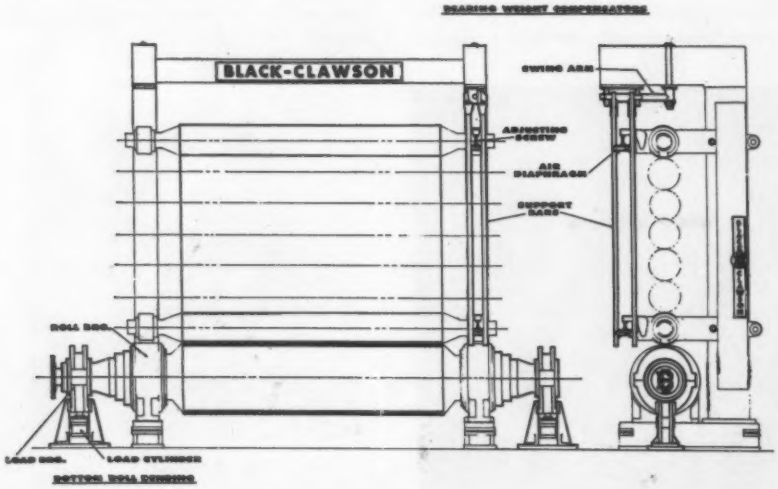
A Practical Approach To Open Side Calender Design

Joseph E. Perkins,
The Black-Clawson Co.

This paper involved a discussion of the method used by engineering to improve the design of open side calenders. Mr. Perkins said that before actual design work was started a complete review was made of all the requirements needed to produce a good calender. This review involved a complete investigation of the following four items:

1. Proper sizing of the equipment.
2. Arranging components for ease in operating.
3. Designing for easy service.
4. Providing for the addition of accessories.

The results obtained by this approach were illustrated by describing some of the important design features of the calender in terms of the four basic items noted above. The design features described were: frames, roll pivot arms, roll lift, roll removal, doctors, cover, air loading and controls.



The newest development in calender design was also described. Mr. Perkins said, "Our newest engineering advance is the Accra-Nip Calender. This is an open side calender equipped with an adjustable mechanical device for maintaining a uniform nip at the bottom roll, under varying nip pressure loadings, without regrinding the bottom roll crown."

This calender can be threaded with all intermediate rolls in operation. The intermediate rolls can be raised while the calender is running, to reduce the number of nips or bottom roll loading. It is not necessary to shut down the calender to make these changes.

He then commented, "We have recently engineered and built a double calender stack equipped with this device, which will be placed in operation in the near future. Basically, this calender is the standard open side design previously mentioned, but has two important additional features, namely: the bottom roll bending device and the bearing weight compensators."

1. Bottom Roll Bending

The bottom roll journals are extended beyond the main roll bearings on the tending and drive sides. Outside each main roll bearing will be a load bearing connected to a floor mounted hydraulic cylinder. The hydraulic cylinders will be individually controlled and used to load the roll journals up or down. This loading will introduce end movements in the roll. Changing the magnitude and direction (up or down) of this loading will change the elastic or deflection curve of the bottom roll and control the amount of crown.

The first calender built consisted of two stacks each having a 37-inch diameter bottom roll and seven 17-inch diameter intermediate rolls, all 226-inch face.

The roll bending device is used on the dry stack. This stack can be run with any or all intermediate rolls in contact with the bottom roll. The bottom roll will be crowned for a uniform nip with four intermediate rolls in contact. Operating with more than four intermediate rolls will cause the bottom roll to deflect down. Loading down on the ends of the bottom roll journals will force the roll up to a uniform nip condition. Operating with less than four intermediate

rolls will cause the bottom roll to bow up. Loading up on the journals will force the roll down to a uniform nip condition. The loading controls are conveniently located on the console.

2. Bearing Weight Compensators

This method of maintaining a uniform nip is largely dependent on keeping a uniform nip between all intermediate rolls. Bearing weight compensators will be used on each intermediate roll bearing housing to counterbalance the weight of the bearing, housing, doctor, etc.

Counterbalancing all weight beyond the roll face allows each intermediate roll to transfer its weight to the roll beneath uniformly, thus eliminating the problem of edge or center loading. All intermediate rolls are ground straight. As the nip at the bottom roll is to be maintained uniform, all nips between the intermediate rolls will be uniform.

Mr. Perkins concluded by saying that there are many advantages, some of which are:

a. One bottom roll crown.

b. No regrinding of crown when changing bottom roll loading.

c. Crown adjustments made at console while calender is operating.

d. All corrections made at one place, the bottom nip.

e. No loading or unloading adjustment, for intermediate rolls.

Further technical information on crown control of the bottom roll was given at the convention in a paper entitled "Crown Control of Paper Calenders," by M. D. Stone and A. T. Liebert of United Engineering and Foundry Co.

Rope Carrier Practices

H. H. Mullins,
Olin Mathieson Chemical Corp.,
West Monroe, La

"Rope carrier practices have been found to be as varied as it is possible to make them," said Mr. Mullins. "It appears that there is a much art to making a good rope run as there is in any craft or profession." He said there are several types of rope carrier systems, one being the single rope system. This actually means that there is a continuous rope that doubles back upon itself forming a two-rope system. Such a system is often employed in a rope carrier from the calender to the reel. It is also employed at a size press on a machine that does not have a rope carrier through the dryers. Another type of rope system is the so-called three-rope system. This is employed on many machines where there are three- and four-deck stack drying systems with long upward draws and which make fairly heavy board.

Transfers

Mr. Mullins mentioned that the problem of transfers is perhaps one of the most controversial issues among good papermakers the country over. There are several types involved. Some are positive types of transfers wherein one of the incoming ropes will go under the tail, following which one of the outgoing ropes will leave the sheet as it goes over a paper roll or as it goes over the dryer. Then, the second incoming rope is laid on top of the incoming rope that is already in place. The second outgoing rope will leave. This is a positive transfer.

Another type transfer is set up in such a manner that the tail is actually dropped from one set of ropes into another set of ropes. The outgoing ropes form a "V" with the point upward and the incoming ropes form a "V" with the point downward. A distinct advantage of this type of pass is the fact that it is possible to pull the tail out of the outgoing rope, thus eliminating the automatic pass, and then later putting the tail in the incoming rope at the operator's convenience or desire. It is not practical to do this with a positive transfer.

Another interesting rope run described by the speaker is that wherein a certain section such as a size press will be roped up under normal operations and by-passed when making other grades. This is not an easy change because it necessitates lifting one of the rolls and sliding the rope out or some other complicated means of having the rope by-pass the press. It is possible, however, to rope the section in such a manner that the operator only has to slide the ropes off the sheave and does not have to get them around the journals and bearings of any roll. The way to do this is to bring the two ropes between the two size press rolls, around the sheaves, and then back between the two rolls without forming a loop around the journal of either of the size press rolls or any of the auxiliary paper carrying rolls. This sounds very complicated, but actually is simple to do.

Factors in Rope Life

Mr. Mullins said there are three fundamental factors involved in rope life. One is the amount of tension carrier on the ropes, another is sheaves and their alignment, and the third is splices.

Tension is produced either through weights or through an air loaded cylinder. It has been our experience with the weight loaded stretches that it is necessary to carry a weight of 30 to 40 pounds on the rope stretch at all times with an additional 40 pound weight being placed on the rope stretch while threading the tail through the machine. This additional weight is removed as soon as the sheet is over. In a similar manner, on the air loaded stretches sufficient pressure is applied to hold the tail between the ropes until the sheet is over the machine and then the pressure is relieved down to, possibly, 10 pounds to improve the rope life.

The second factor mentioned above was the sheaves and their alignment. The sheaves should be aligned to prevent the ropes from rubbing against the frames of the machine and idler sheaves, or anything that is stationary, that has a square edge, or that will chafe the rope.

One of the most important factors in rope carrier life is the splicing. There is some art in splicing ropes and there are a considerable number of tricks which may be found useful, one being to smear some machinist's blue or chalk or even grease on the outside of the rope where the splice will be made, so that when the strands are laid back in, there will be something to guide the splicer in putting the original amount of twist back in the strand and in placing the strand back in the rope.

Cold Soda System Features Low-Power Consumption

E. R. Gremler
Technical Director, Pandia Division,
The Black-Clawson Co.

J. N. McGovern,
Chief Process Engineer,
Parsons & Whittemore, Inc.

This report gave the results of a pilot plant investigation of a cold soda pulping system featuring low power consumption for a well-defibered pulp with a high freeness.

Defibering Stage

A newly designed defibering machine operating on a well-developed principle, the Chemifiner, was used in the investigation reported here. This machine accepts impregnated chips of 30 to 35 per cent consistency. It functions as follows: Chips are screw fed into the center of two plates or disks rotating at the same speed and in the same direction. The centers of these plates are offset and, for that reason, there is a speed difference at a given point. The plates have small pyramid-type stellite teeth, which hold the material. The speed differential at a given point between the plates disrupts the bundles into fibers, and curls them. The plates can not touch, and all the energy is used in defibering the pulp. Due to this fact and due to the high consistency of the stock, the Chemifiner uses less power than that required by other defibering machines operated conventionally for producing defibered, unrefined pulps.

Comparison of Systems

A comparison of pulping results and pulp strength properties for several cold soda pulping systems using aspen wood was made, and observations were as follows:

1. A basic steeping proces gave a strong cold soda pulp with consumption of 7.5 per cent NaOH and 27.5 h.p./ton/day. The power consumption for the high freeness value of 730 ml. is quite high.

2. A pressure impregnation system produced a weak pulp with an extremely high power consumption using a low chemical application of 2.7 per cent and a stronger pulp with chemical amounting to 6.0 per cent but still with a high power need.

3. A roller press system gave a pulp of good strength with a low power consumption and a moderately high estimated chemical consumption. The estimated time in the roller press was very short, 2 to 3 minutes.

4. The feeder press—Chemifiner (low-power) system gave a strong pulp with low concentration and consumption of NaOH and the lowest power consumption of all the systems above. Thus, this system appeared to give pulping and pulp strength results equal to or better than the other processes but with unusually low power consumptions.

The favorable results powerwise from the low-power system above were attributed to preliminary chip disintegration and primary defibering in the feeder presses in the presence of caustic soda and the use of a high-density and high temperature with the special rubbing, fiber-on-fiber action.

Bamboo

The cold soda pulping of bamboo by the low-power system was investigated and this material was found to react quite similarly to hardwoods, just as it does in full chemical pulping. The bamboo cold soda pulp, however, was distinguished by its exceptionally high tearing strength. This is in agreement with its fiber length, which is of the order of 3 mm. as compared with .8 to 1.5 mm. for the hardwoods. The bursting strength of the bamboo cold soda pulp was in range of aspen and birch pulps. Therefore, this pulp had a high strength value. Folding tests were not available. The results on bamboo indicated great potentialities for cold soda pulps made from it, which would be especially important if this would lead to its use as a groundwood-type pulp.

Bleaching

A quantity of low-power cold soda pulp was made for bleaching from a northern hardwood mixture using a caustic soda treating solution and a 20-minute impregnation among other conditions. The low-power cold soda pulp responded normally to a peroxide bleaching.

Conclusions

Conclusions on the use of a continuous cold soda pulping system comprising short feeder press impregnation and defibering in a special disk refiner were that:

1. Well-defibered pulps are produced at high freeness with low-power consumption. These pulps are equal or superior in strength properties to pulps made by the basic steeping and conventional disk refiner systems before and after refining.

2. Pulps are made with low-power consumption having properties ranging from those similar to softwood groundwood to those approaching hardwood chemical pulps (except for low folding endurance), depending on the fibrous raw material and process conditions.

3. Bamboo makes a strong cold soda pulp with an especially high tear factor.

Maine P & P Foundation Honors Gannett

James A. Gannett received the University of Maine Pulp and Paper Foundation 1960 Honor award at the annual luncheon held during the TAPPI Convention. Mr. Gannett is the retiring resident secretary of the Foundation. The citation was read and the award was presented by J. Larcom Ober, president of the Foundation.

Featured speaker at the luncheon was William M. Hall, president of Charles T. Main, Inc. He discussed the power aspects of the St. Lawrence Seaway, a project on which his company participated. More than 125 alumni and friends heard Mr. Hall's address.

F. A. Soderberg, vice president of the Foundation, defined the purposes and objectives of the Institute to be offered at the University this summer as a refresher and orientation course for personnel of the paper and allied industries. Guest lecturers from the industry during past years were recognized by Professor Lyle Jenness, head of the Department of Chemical Engineering at the University. The meeting was concluded with the election of Peter Calott, of Penick & Ford, Ltd., as chairman of the 1961 luncheon.

Production of High Wet Strength Paper by Wet End Addition of Dialdehyde Starch

Wet-end addition of dialdehyde starch to representative pulps under practical conditions has produced papers with excellent wet strengths and improved dry strengths in research at the Peoria, Ill., laboratory of the U. S. Department of Agriculture. Handsheets tested had dry breaking lengths of up to 10 kilometers and retained 30 per cent of this 30 minutes' soaking in distilled water.

The use of dialdehyde starch, which now is commercially available, as a wet-strength additive for paper is believed to offer attractive possibilities. Among these are:

Broke recovery is easy. A mild, mechanical, hot-water treatment removes dialdehyde starch from the paper.

A practical proportion (0.5 per cent of the pulp dry weight) of dialdehyde starch produces wet strength that the Peoria chemists think is satisfactory for most uses. Greater proportions of the additive produce greater wet strength.

Wet strength developes rapidly.

Heating to develop wet strength or accelerate curing is not necessary.

Dialdehyde starch dispersions require no aging or curing before use, and they appear to keep well.

Earlier research, performed by the Institute of Paper Chemistry under contract with USDA's Northern Utilization Research and Development Division, showed that dialdehyde starch produces excellent wet strength when it is applied to paper as a tub size. The present work defines practical conditions under which dialdehyde starch may be added to and retained in paper pulp before sheets are formed.

Dialdehyde starch increased the wet strength of the paper on the left, which supports a load 10 times as large as the one that has broken the untreated paper.

Studied Various Conditions

"Dialdehyde starch" is a general term for chemicals that are made by oxidizing starch with periodic acid. Complete oxidation yields a polymeric dialdehyde that has few starch-like characteristics. Controlled, partial oxidation yields products with properties intermediate to those of starch and the polymeric dialdehyde. The difference between such a product and its parent starch increases as the oxidation of the starch increases.

In the present work on paper applications, Northern Division chemists studied such wet-end conditions as concentrations of dialdehyde starch and alum, manner of dispersion of dialdehyde starch, and pH of the furnish. Dialdehyde starch and alum were added to three commonly used pulps at various pH levels. Handsheets were made from these furnishes and tested for various properties. C. L. Mehltretter, directed the research on the use of dialdehyde starch in paper. Experiments were performed under the leadership of B. T. Hofreiter by G. E. Hamerstrand, W. E. Schulze, and A. J. Ernst.

Develops Wet Strength

The experiments show that additives such as alum materially aid the retention of dialdehyde starch in the pulp. Paper with wet-breaking lengths of 1.6 kilometers, about 18 per cent of the treated dry strength, was produced from bleached softwood sulphate pulp when dialdehyde starch was added at the level of 0.5 per cent of the dry weight of the pulp in the presence of alum. Increasing the addition of dialdehyde starch to 2.5 per cent of the pulp dry weight increased the wet breaking length to 2.4 kilometers, about 25 per cent of the treated dry strength. The control paper in both cases had a wet-breaking length of 0.27 kilometer, about 3 per cent of the untreated dry strength.

Addition of dialdehyde starch above the 2.5-per cent level produced less wet-strength increase than additions between the 0.5 and 2.5-per cent levels. Wet-breaking length at the 10-per cent level of addition, for example, was less than 2.5 kilometers.

Mr. Hofreiter and his coworkers found that dialdehyde starch in conjunction with alum develops maximum wet strength in papers when it is applied at pH 4.5. Above this wet strength decreases. It varies with the retention of the dialdehyde starch at a pH below 4.5.

Permanency of wet strength in dialdehyde starch-treated paper was determined by TAPPI standards. At the end of 30 minutes, the samples retained 22 percent of their wet strength. This is sufficient for many applications and permits easy recovery of broke. Comparison of treated to untreated handsheets showed that papers containing dialdehyde starch generally have greater dry tensile and dry burst strengths but less dry tear strength.

By B. T. Hofreiter, G. E. Hamerstrand, C. L. Mehltretter, W. E. Schulze, and A. J. Ernst of Northern Regional Research Laboratory, U. S. Dept. of Agriculture, Peoria, Ill.

Class of '35 Honored At Syracuse Luncheon

Alumni of the Pulp and Paper Department of N. Y. State College of Forestry at Syracuse University held their annual luncheon at the Hotel Biltmore during "Paper Week." The honor class was that of 1935. A surprise at this, the 26th annual luncheon, was the announcement by Professor C. E. Libby of his retirement from North Carolina State College at the end of the present school year.

Included in the program was a film, produced in the Department of Pulp and Paper Technology by Dr. William Harlow. Recipient of many awards, the film was entitled "From Wood Fibers to Paper."

There were approximately 152 alumni attending the luncheon at which the following were named to new posts as officers of the Pulp and Paper Alumni Association. L. R. Ayers, Continental Can Co., president; J. J. Sullivan, Lowe Paper Co., vice president and W. F. Reynolds, American Cyanamid Co., secretary-treasurer.

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Under-Water Versus Land Wood Storage And Effects on Groundwood Pulp

Harry A. Dailey,
Diamond National Corp.,
Ogdensburg, N. Y.

The object of a project reported by Mr. Dailey was to determine the effects of storing rough and peeled wood on land and underwater upon the brightness, bleachability and other physical characteristics of the pulps produced from these woods. At Ogdensburg several cords of Adirondack spruce were obtained from a single source and divided into 5 groups. One group was barked and pulped immediately. Two groups were barked and two groups were left rough. One of each of these groups was submerged in the St. Lawrence River while the other two groups were stored yard piled on land.

About one half a cord was removed from each group at the end of 16, 32, 53, 88, 105 and 115 weeks storage for pulping evaluations. All of these pulpwood samples were ground and the pulp was screened, thickened and delivered to Professor F. W. O'Neil and F. W. Lorey at the Dept. of Pulp and Paper Technology, College of Forestry at Syracuse University, within 24 hours for bleaching studies. The physical properties of the pulp were evaluated in the Physical Testing Laboratory of Diamond National.

Unbleached Brightness

It was evident that the unbleached pulp brightness, throughout the total storage period, of the underwater stored wood was from 1.5 to 4.0 points lower than on the wood stored on land. It is also noted that in both land and underwater storage, the peeled wood pulps run from 1.2 to 5.5 points higher in brightness than those stored in a rough condition.

After 16 weeks of storage and a January removal all of the pulp sample brightnesses were reduced with the exception of the peeled land stored which remained the same. After 32 weeks, with sampling in early May all of the pulps had a higher brightness than did the fresh sample with the exception of the rough underwater stored wood.

In September at the 53 week storage point, the unbleached brightness of all samples were below that of the fresh pulp. After 88 weeks they drop slightly lower with the exception of the rough land stored. At the end of the two years of storage both peeled woods are equal to the fresh wood in brightness while the rough stored woods are below.

Bleaching Gain

On fresh cut wood 7.6 points were gained by bleaching bringing the brightness up to 63.2. After 16 weeks of storage the brightness gains were greater than this on all samples except the peeled land stored. In 32 weeks the brightness gains on all samples were exceedingly low.

At the end of 53 weeks and again after 88 weeks the brightness gains are all considerably higher than they were on the fresh wood pulps. After the two year storage period the bleaching response tapered off but they still are better in most cases than on the fresh cut control sample. The rough land stored is the exception in which deterioration is evident in many of the logs during the last summer.

The final brightness at the end of the storage period of both peeled stored samples was higher than that

TAPPI Executive Committee including newly elected Executive Committee members: Seated are (l. to r.)—John F. Weidner, Kenneth G. Chosley, James R. Lientz, Harold H. Annis, J. Ray Curtis, R. G. Macdonald. Standing—H. O. Ware, P. S. Cade, Allen Abrams, F. P. Doane, Jr., J. M. McEwen, K. D. Running, J. H. Heuer, H. A. Spencer, W. C. Bloonquist, Alfred H. Nadelman, F. S. Klein, L. G. Roland, P. E. Nethercut, J. J. Koenig.

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on the fresh cut wood two years before. On the underwater stored sample it was due to a greater bleaching gain while on the land stored sample it was due to a higher unbleached brightness.

that on the fresh cut wood. At the end of the full storage period both rough land stored samples were somewhat lower than the others.

The burst strength on all samples gradually increase in the first 6 months of storage and then decrease with the rough wood dropping at a greater rate than the peeled wood in the second year of storage.

Pulp Properties

It was noted that in all groups the amount of screen rejects lessened after storage of over one year. At the end of the storage period it appeared that the wood groups stored underwater had a higher pulp freeness than did those stored on land.

All porosity readings (2.5 gram handsheets) through the first year and a half of storage were lower than on the fresh wood pulp. After 2 years of storage the porosity of both rough underwater stored samples increased somewhat in its relationship to the freeness. They were also the groups that showed signs of decay.

After 32 weeks of storage the tear factor (obtained by testing handsheets) shows considerable improvement under all conditions of storage and then gradually tapers downward until the final tear values on the two year storage samples are equal to

Some of the foreign visitors and overseas TAPPI members attending the meeting, are greeted by Philip E. Nethercut, executive secretary of the Association. Left to right: Mr. Nethercut; Dr. G. Conciatore, Cartiere Ambrozio Binda, Crusillano, Italy; Dr. Luciano Pasero, Cartiere Ambrozio Binda; Dr. Lars-Henrik Forssblad, Research Manager, Marma-Langrors AB, Marmaverken, Sweden; Dr. H. W. Giertz, Technical University of Norway; Dr. Gunther Hunger, Institut fuer Cellulosechemie, Darmstadt, Germany; and Dr. Piero Bersano, Cartiere Burgo, Torino, Italy.

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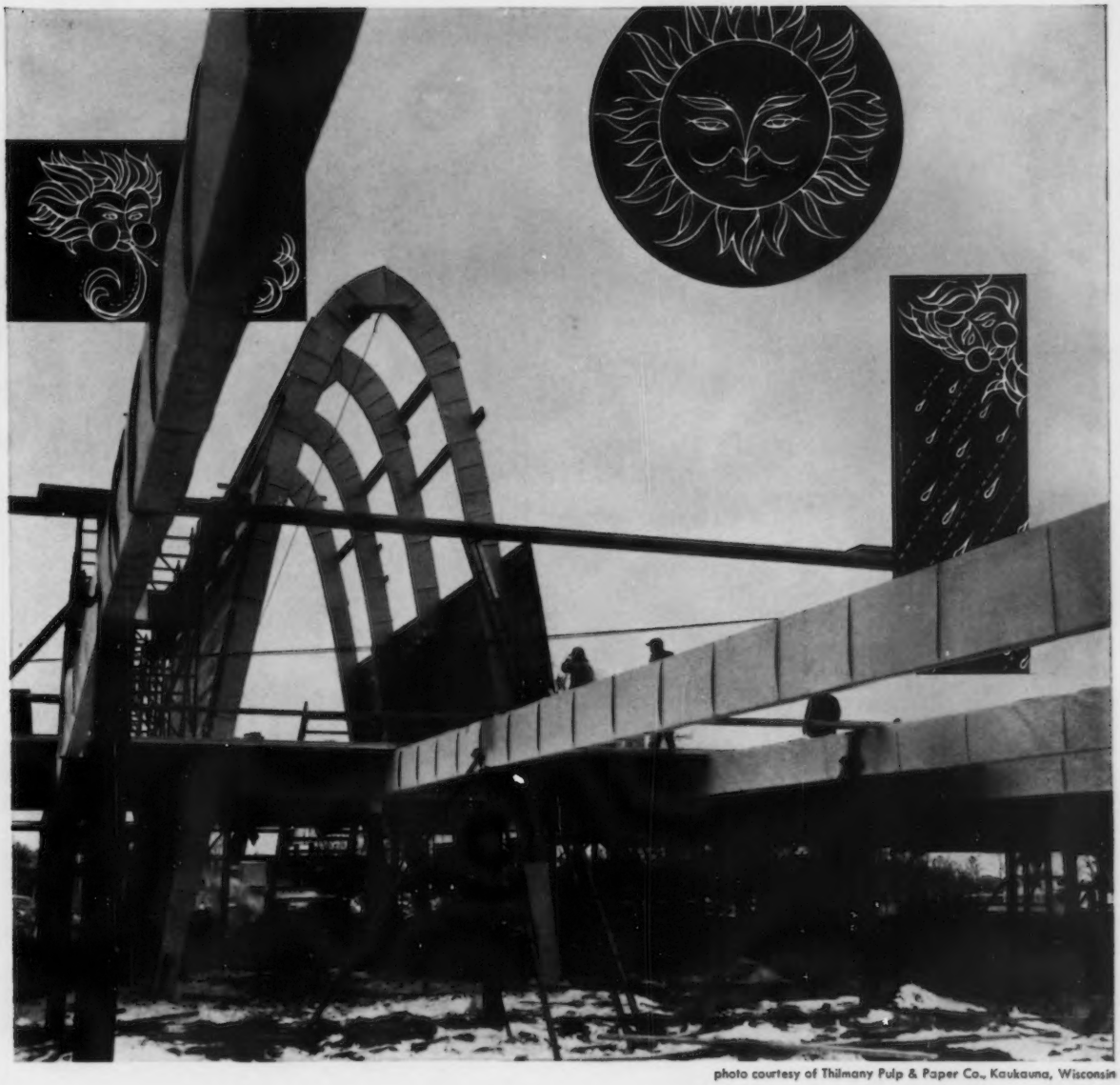

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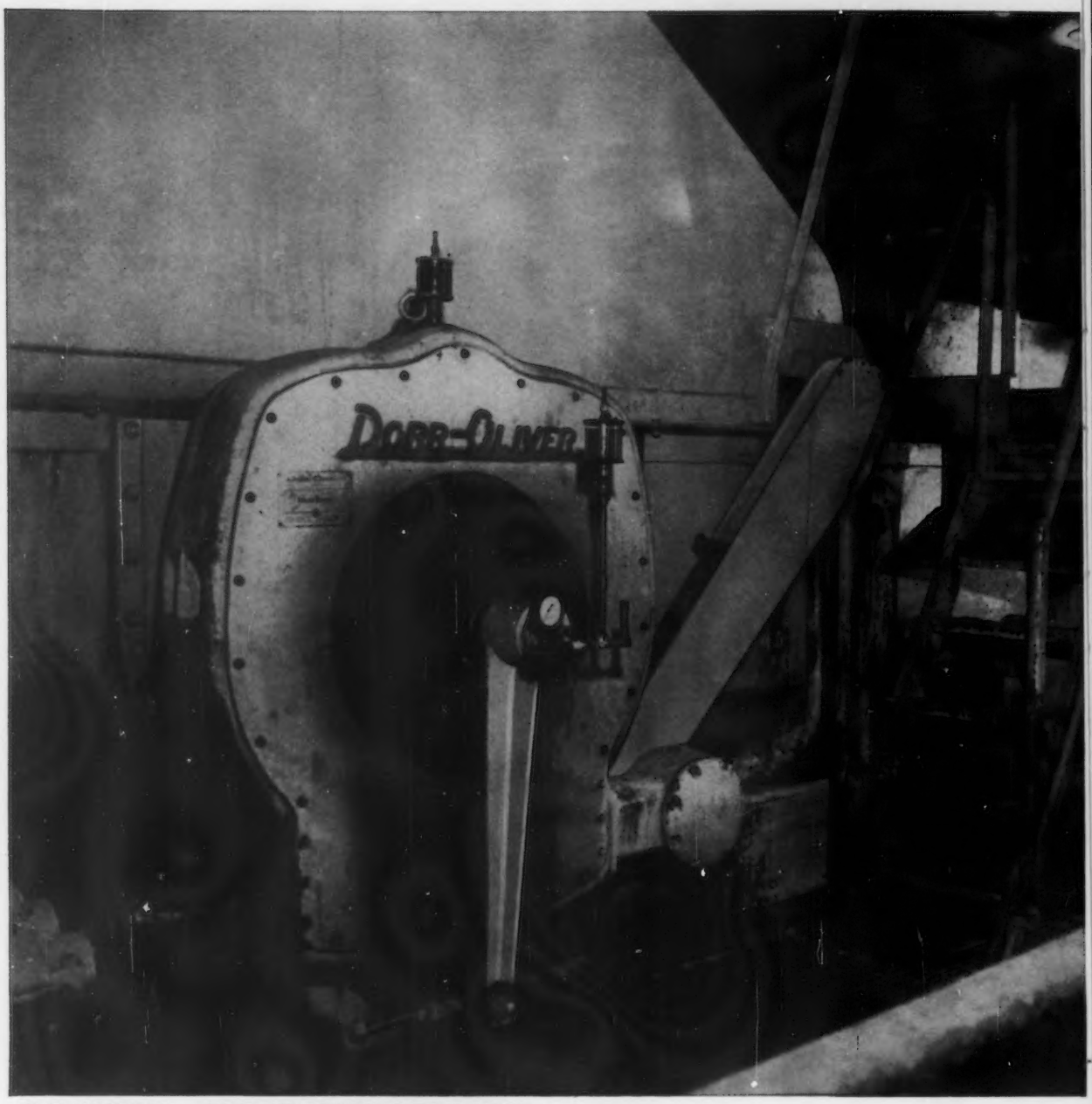

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Further evidence of the acceptance of the Oliver Brownstock Washing System is offered by the recent installation at the Longview, Washington mill of the Weyerhaeuser Timber Company.

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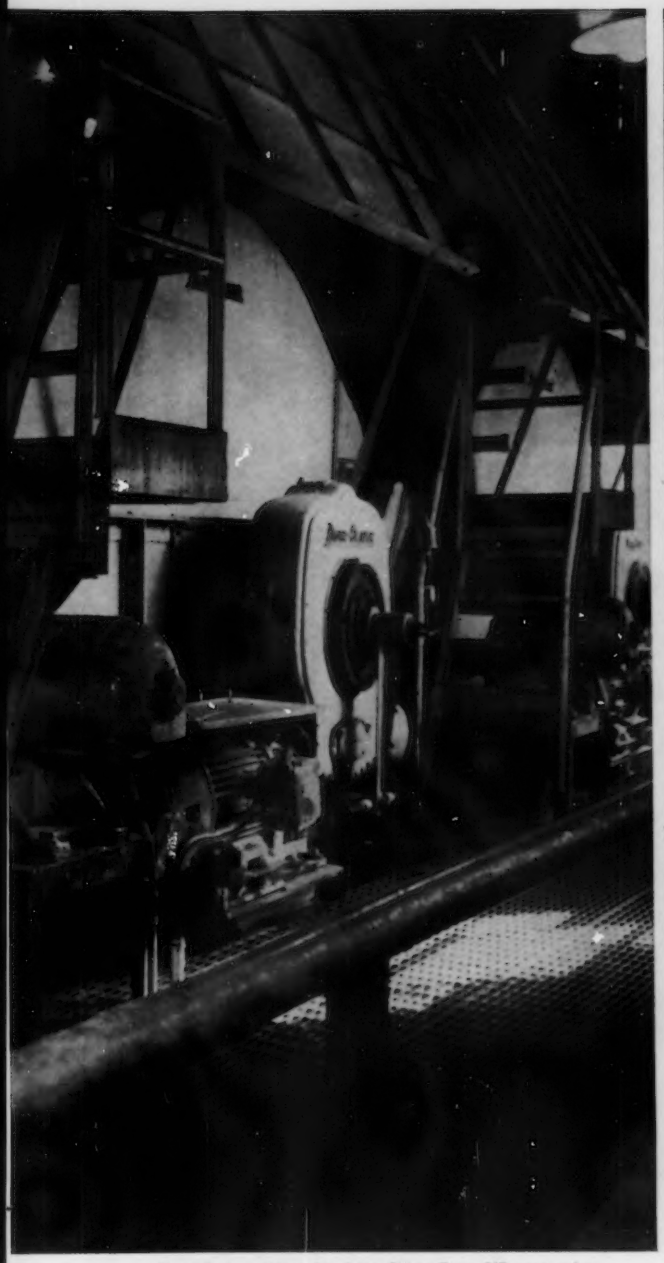

Overall view shows the three Oliver Type 55F cone valve Brownstock Washers installed in the Weyerhaeuser mill.

Three stages of the washing operation are shown in these photos. Note the clean, uniform sheet formation in the final stage.

years of designing, engineering and servicing hundreds of Washers in the pulp and paper field, as well as thousands of filters in the process field in general.

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Research Findings on Cotton Linters in Papermaking

Wide use of cotton linters pulp in papermaking is indicated as a result of the latest findings of a continuing research project by Buckeye Cellulose Corp., Karl A. Jurbergs reported. The findings will be of particular interest to manufacturers of fine writing paper who face a growing shortage of cotton rags.

Electron microscopic evidence shows that linters and staple cotton have essentially the same surface structure even though they are separate and distinct fiber growths. On the surface of each are cellulose bundles of fibrils which form ridges running at an angle around the fibers. The Buckeye studies reveal that commercial pulping processes frequently destroy the surface ridges of the fibers. The elimination of ridges appears to be more pronounced in the staple cotton fibers.

Mr. Jurbergs pointed out that although linter pulp fibers usually have sufficient surface fibrils, interfiber bonding is hampered by the stiffness of the split-off fibrils and by the resistant surface ridges encountered on these fibers. The inability of the linter fibrils to collapse easily prevent untreated linter pulps from developing the necessary strength properties.

Photomicrography of Buckeye Lintabond, a blend of partially hydroxyethylated and untreated cotton linters, after beating.

Through chemical modification, Mr. Jurbergs said, the surface structure of linters can be changed sufficiently to improve their beating characteristics. At the same time chemical modification improves the degree of hydration and increases the swelling and conformability of the fibers. Controlled partial hydroxyethylation affords this improvement in bonding characteristics without a consequent fiber strength loss.

Apply High Polymer Studies To Cellulose Products

Recent Buckeye research on the insoluble contents of cellulose acetate solutions marked the first extensive application to cellulose derivatives of many of the basic tools for the study of polymer solutions, Dr. Leslie H. Sperling, research chemist for Buckeye Cellulose Corp., said.

The results of the Buckeye studies should permit further improvement in products made from cellulose acetate. Reporting data developed by himself and Miss Marie Easterwood, also a Buckeye researcher, through use of light scattering and electron microscopy techniques, Dr. Sperling detailed new findings on the chemical and physical characteristics of the insolubles, or gels, found in both linter and wood cellulose acetate solutions. Buckeye undertook the study, because while the relationship of haze and filterability to the gel content of acetate solutions is well known, relatively little was known about the gels themselves.

Dr. Sperling reported that in the Buckeye study the gels were frac-

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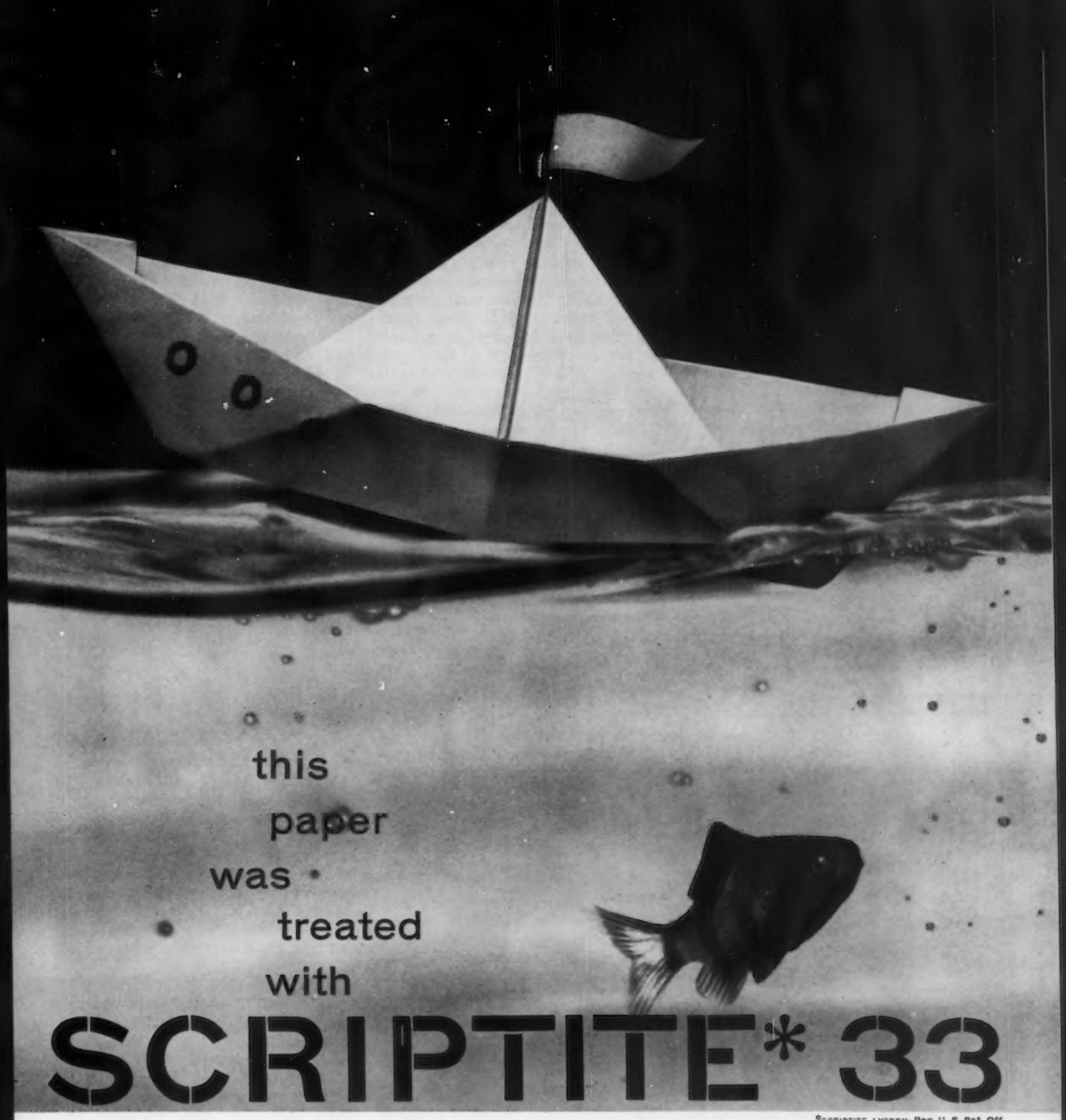

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tionated by filtration, centrifugation, and dialysis techniques into two groups—gels under 15 microns in size and gels over 15 microns. The small gels appear to be uniform, nearly spherical and rich in xylan. A close relationship was found between the small gel content and haze. The gels over 15 microns in size appeared to be fibrous and composed of cellulose I and cellulose triacetate. The large gels were found to be the predominant cause of filter plugging, although aggregates of the small gels also contributed to the problem.

Comparing linters with wood pulp, he said, acetates of the former contain mostly large gels which are easily removed by filtration. Conversely, the number of small gels is much lower for linters than wood pulp. Dr. Sperling cited these observations to explain the superior clarity of the linters acetate solutions. Cellulose acetate was selected as the first derivative for study because the acetate industry is the largest user of chemical cotton and second only to the viscose industry as a consumer of dissolving wood pulp. Other cellulose derivatives which may now be investigated include nitrocellulose and the various cellulose ethers.

Process Control As Related to Fourdrinier Operations

Roger L. Traxler,
Process Control Engineer,
Scott Paper Co.

"Having established controls on quality, it seems reasonable that a control of the papermaking process would make the achievement of uniform quality easier and more economical by minimizing rejections, lost time, and waste," said Mr. Traxler. This was a discussion of process control as generally practiced by the technical control departments of Scott.

Process control was established to measure the materials in the process and to inform production of the trends and variations from a standard which has been established from operating experience. Various points in the process were then selected as giving directional guidance to the operation.

Furnish Control

Furnish control has been singled out by many as the most important factor in process control. Any errors or large variations in furnish are reflected in the entire process. Without sound furnish control practices, subsequent testing and analysis can become meaningless.

On each shift, tests are taken of furnish consistency, freeness, and pH. In addition, classification of fiber length is made daily. Some of this information is of immediate use to production groups (such as consistency), whereas the balance of the data can be used either to confirm that the process is under control or to detect trends in the system.

On Machine Testing

Machines are tested each shift for headbox and tray consistency, as well as those tests already mentioned. All of the information which has been gathered throughout the machine system is considered as an integral part of the machine testing so that a valid analysis of data can be made. From the headbox and tray consistencies, a water rate calculation can be made. This calculation is made to inform the operator of the volume of water coming out of the slice in gallons per minute.

A useful index on water rate is gallons per foot of speed. This would normally be tied to wet end speed and is obtained by dividing the water rate by the speed. Headbox and tray consistencies also will yield a calculated per cent wire retention and a fines-to-furnish ratio.

Weight profiles are periodically made with a Beta Ray gauge. Frequent reel moisture tests give direction to the operator when changes in moisture content are needed.

It is the duty of those engaged in process control activities to devise supplemental testing procedures which are rapid and useful even though the tests may not be accepted as standard.

Modern Methods of Mechanical Pulp Manufacture

A new book, published early last Fall, covers comprehensively all aspects of groundwood pulp production. The author, K. H. Klemm, has a broad knowledge of groundwood manufacturing methods and has been associated with groundwood mills on both sides of the Atlantic. $5.00

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PAPER PEOPLE

R. E. Flowerree, Jr.

A. G. Naudain

Georgia-Pacific Announces Exec. Changes

R. E. Flowerree, Jr., will become president and chief executive officer of Georgia-Pacific Paper Co., wholly owned subsidiary of Georgia-Pacific Corp., on April 1. H. Stuart Daniels, now president of the paper subsidiary, will assume the new post of chairman of the board of Georgia-Pacific Paper Co.

Full responsibility for sales of the paper company will be assumed by Albert G. Naudain, vice president of the paper subsidiary, who has been serving as assistant to Mr. Daniels in charge of sales. A 20-year veteran in the paper and containerboard industry, Mr. Naudain has held major domestic and export sales responsibilities.

Mr. Flowerree will continue as vice president in charge of manufacturing of Georgia-Pacific Corp. along with his new post as Georgia-Pacific Paper Co. president.

William J. Shelton, vice president of Georgia-Pacific Paper will continue in charge of the company's expanded production facilities. Within the last two years, Georgia-Pacific Paper Co. has enlarged its production by about 40 per cent. It is currently constructing an addition to its mills which will double the company's capacity when put into operation in mid-1960.

W. J. Shelton

Gottwald Given New Post at Albemarle

Bruce C. Gottwald has been elected assistant secretary of Albemarle Paper Manufacturing Co.

Mr. Gottwald is a graduate of Virginia Military Institute and has been with Albemarle Paper since 1956. Recently, he has been an acting group leader for product research and development.

James Joins Consolidated As Vice President

C. H. R. Johnson, president and general manager of Consolidated Paper Co., announces the appointment of Robert D. James as vice president and general sales manager.

Mr. James comes to Consolidated from American Box Board Co., now a division of the Packaging Corp. of America, where he started in 1940 as stock box salesman. He became assistant sales manager in 1944 and sales manager for folding cartons in 1946. In 1952 he was promoted to sales manager for the Grand Rapids mills and in 1956 general sales manager for the Filer City mills.

Kramer E. Verhoeven, formerly vice president & general sales manager, is now vice president in charge of sales for the North Side Mills and Corrugated Division and for the West Side Automotive & Forming Board Division.

Moffatt Retires After 50 Years in Holyoke Plants

Edwin H. Moffatt, 66, superintendent of the finishing department at the Chemical Fine Paper and Board Division of the Standard Packaging Corp., retired February 26.

Mr. Moffatt's retirement will mark the end of 50 years spent in the paper finishing field, the past 35 years at Chemical Paper.

Since 1955, he has been superintendent of all finishing operations at the firm's three mills, Chemical, Crocker-McElwain, and Main St.

His only other job in papermaking was as member of the finishing department at the American Writing Paper Corp. from 1910 to 1925, interrupted by World War I Naval service from 1917 to 1918.

Bongers Joins Mac Sim Bar As General Superintendent

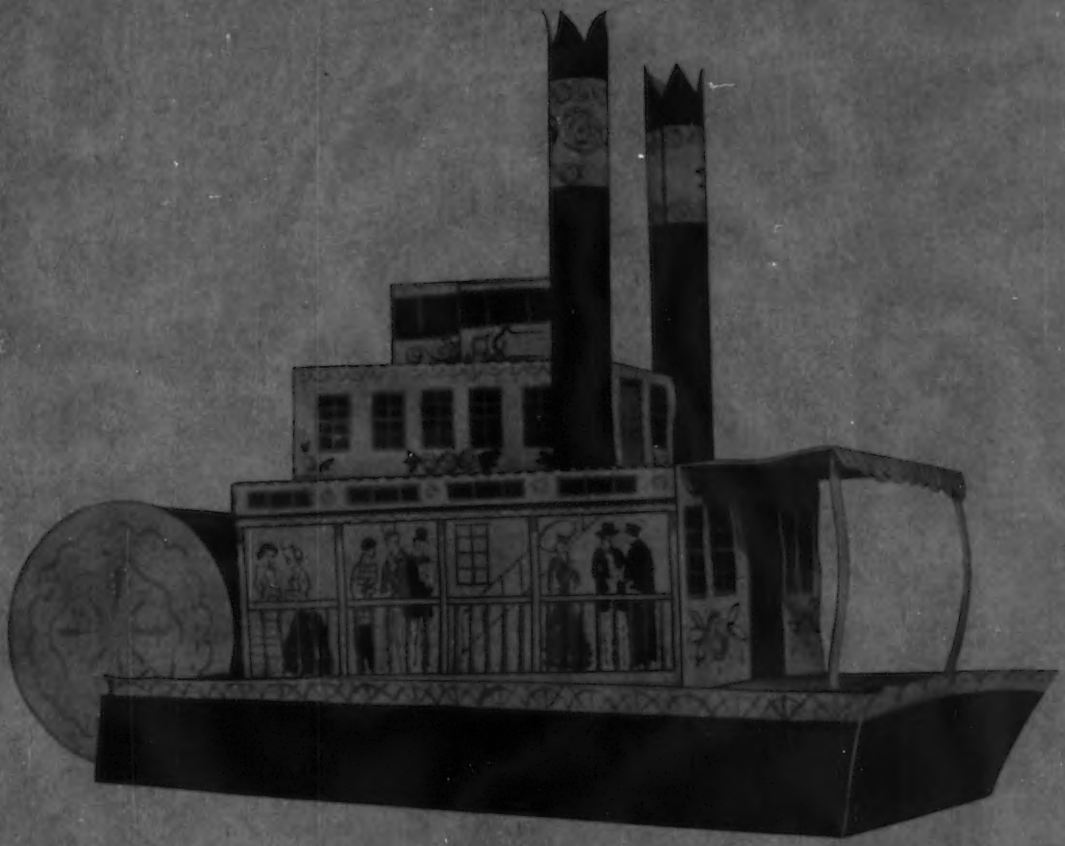
Henry A. Bongers, has been appointed general superintendent of Mac Sim Bar Paper Co. at Otsego, Mich., Mr. Bongers was formerly with Fort Orange Paper Co. at Castleton on the Hudson.

S. D. Warren Names Hisey Chief Engineer

Robert W. Hisey has been named chief engineer of the S. D. Warren Paper Co. mill, Westbrook, Me.

Mr. Hisey, believed one of the youngest chief engineers in the industry, fills a post vacant since 1953 when Frank W. Roberts was made manager of the company's mill in Muskegon, Mich.

Mr. Hisey has been technical service director. He is a graduate of Middlebury College in Vermont, and received his master's and doctor's degrees from the Institute of Paper Chemistry at Lawrence College in Appleton, Wis.



TALK OF THE TOWN

AT THE TAPPI CONVENTION

was Cyanamid's Melostrength* Paper Boat-Bag Exhibit. To dramatize the wet-strength of paper treated with Melostrength resin we turned bags into boats and floated them in a tank.

THIS SHEET IS SIMILAR TO THE PAPER USED AT THE EXHIBIT

It is made with Parez® 607 paper resin, Cyanamid's effective Melostrength wet-strength resin. You can judge the results for yourself by using the approved TAPPI standard methods for testing wet-strength.

*Trademark

CYANAMID

Turn page for more facts

THERE'S MORE TO THIS SHEET OF MELOSTRENGTH PAPER THAN MEETS THE EYE

It is ideal for use in grocery bags. It has the extra wet-strength needed to minimize bursting danger during rainy-day shopping. It can carry frozen packages and other moist articles with a high degree of safety. After articles have been removed, it makes an excellent bag for re-use in a home.

It was made with Parez 607 resin, Cyanamid's effective Melostrength resin for imparting a high degree of wet-strength. Like all papers made with Parez 607, this sheet had its wet-strength properties the moment it came off the machine. No warehouse space required for the usual natural aging.

Use of Parez 607 provides the same wet-strength reliability for automobile seat covers, tissues, laundry tags, toweling and other papers where wet-strength is important. For further information, call your Cyanamid Paper Chemicals salesman.

The Cyanamid Melostrength Exhibit at the TAPPI Convention was the opening step of an overall Melostrength program to emphasize the importance of Parez 607 in making wet-strength papers.

Utilize Parez 607 and the HE† Process to meet ordinary wet-strength specifications with less resin, or to give superior wet-strength with the same amount of resin now needed.

†High Efficiency Process for resin economy—patent applied for by American Cyanamid Company

melostrength* paper
Wet or Dry . . It's Stronger
*T.M. AMERICAN CYANAMID COMPANY

CYANAMID

AMERICAN CYANAMID COMPANY, PAPER CHEMICALS DEPARTMENT, 30 Rockefeller Plaza, New York 20, N. Y.

J. J. Verwayen

Mead Names Verwayen Manager in North Bergen

J. John Verwayen has been named division manager of The Mead Corp.'s paperboard mill at North Bergen, N. J. Prior to this promotion, he had been chief engineer for the mill and the adjacent Mead Containers plant for 13 years. In this position, he was responsible for activities of the engineering and maintenance departments and power plant.

Mr. Verwayen, a native of the Netherlands, graduated from Middelban Technische School, with a degree in marine engineering in 1934. He received a B.S. degree in mechanical engineering from Cooper Union School of Engineering of N.Y.C. in 1950.

Oakes Named Sales Mgr. Of Filer City Mills

Appointment of John Oakes as sales manager at Packaging Corp. of America's Filer City mills has been announced. His new responsibilities include the sale of both bleached kraft and corrugating medium which are produced at this location.

Mr. Oakes joined the company in 1953, and has headed up corrugating medium sales since 1956.

C-Z Moves Richardson To Seattle Offices

Ronald Richardson has been appointed to succeed Ralph D. Dickey as resident manager of the Crown Zellerbach Corp.'s general offices in Seattle, following Mr. Dickey's retirement in June.

Mr. Richardson has been serving as Northwest public relations manager for Crown Zellerbach in Portland, Ore. As resident manager in Seattle, he will be responsible for the company's newsprint-sales activities in the Northwest, He moved to Seattle March 1.

Mr. Dickey, who has been with Crown Zellerbach 43 years, will continue to serve the corporation as a consultant after his retirement.

Schnyder Commemorates 35 Years in Paper Industry

A. P. Schnyder, well-known consultant to the pulp and paper industry, commemorated his 35th anniversary in the industry last month with a luncheon at the Canadian Club in New York for a group of friends.

Previously Mr. Schnyder worked in steel, electrical equipment manufacturing, public utility and railroad electrification. He launched into the pulp and paper industry in 1925 with George F. Hardy, a leading consulting engineer, working in his first five years on the design of seven Canadian

A. P. Schnyder

newsprint mills with a total of 17 machines. Between 1935 and 1940, Mr. Schnyder designed five integrated Southern mills including the first newsprint mill at Lufkin, Tex., and the Union Bag mill at Savannah.

Temporarily stepping out of character during World War II, Mr. Schnyder was instrumental in the design of a tire plant for lendlease for Russia, and spent a year and a half on a copper mining modernization in the Copper Basin of Tennessee.

After World War II, Mr. Schnyder designed an 80-ton integrated kraft mill in Mexico, expanded the Lufkin mill and designed a 700 ton kraft linerboard mill at Macon, Ga.

After Mr. Hardy's death, Mr. Schnyder joined Ebasco Services in 1948, starting with the design of the first newsprint mill in India, and the redevelopment of an outdated mill at St. John, New Brunswick, followed by the design and construction of a major dissolving pulp mill at Jesup, Ga., and foodboard mill at Brewton, Ala. He joined The Lummus Co. in 1956 as consulting engineer of its new pulp and paper division.

E. H. Walthers

C-Z Announces Organization Changes

Unification of distributor sales under one national division has been announced by Crown Zellerbach Corp. The expanded distributor sales Division incorporates the functions of the former regional distributor sales division, Gaylord division bag and paper sales, and Crown's eastern sales division.

EASTERN AND WESTERN AREAS

Under administrative control of the distributor sales division are two areas to be known as the eastern area and western area.

E. H. Walthers, formerly manager of the regional distributor sales division, has been named general manager for the new distributor sales division and will have responsibility for overall marketing.

P. G. Sletton moves up from sales manager, distributor sales division to the newly created position of manager, western area, distributor sales.

L. W. Hagstrom, formerly regional sales manager, distributor sales division, has been promoted to the new post of manager, eastern area, with headquarters in New York City.

George Tuft moves up to sales manager, western area. Mr. Tuft formerly was product manager, industrial towels and tissues.

Leo Jacobs has been promoted from sales manager of industrial towels and tissues, eastern division, to sales manager, eastern area, distributor sales.

W. L. Wuescher, assistant sales manager, Gaylord wraps and bags, assumes the new position of regional sales manager, distributor sales division, St. Louis.

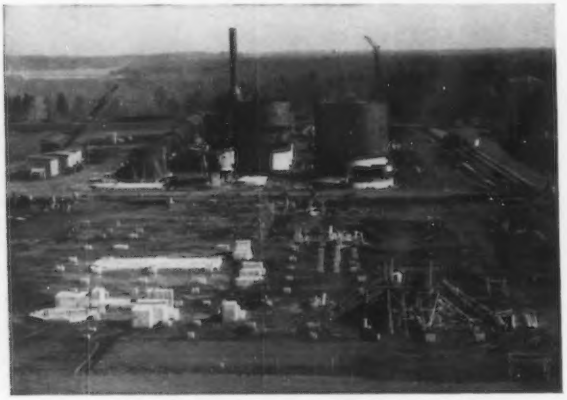
L. W. Gould, Crown Zellerbach assistant vice president, will continue as eastern corporate representative and will assume new line coordination responsibilities for distributor sales division, eastern area.

(Continued on page 70)

M KELLOGG W On Schedule

Looking west, showing foundations for the Seal Tanks and Digesters, and the fire wall for west end of Machine Room, and structural steel frame for Warehouse. Left is plant Fire Tank.

Looking northeast, showing excavation and foundations for Engineering and Laboratory Building, Repair Shop & Stores, and Recausticizing Tanks.



Looking east, showing foundations for Recovery and Evaporator. In background are the Recausticizing Tanks, Lime Kiln, and Scrubber Stack.

Looking east, showing floor slab of Personnel Office and Main Office Building. In background are Repair Shop & Stores, Recausticizing Tanks, and Lime Kiln.

Looking north, showing foundations for Digesters and Seal Tanks. In background is one section of Barking Drum and Hog. Extreme left are two of the Digesters.

Looking east, showing foundations and columns for Machine Room, Repair Shop & Stores. In background are the Recausticizing Tanks, Lime Kiln, and Digesters.

at Tennessee River

Construction Progress Demonstrates Efficiency of Kellogg's Turn-Key Approach to New Mills

These photographs, taken in December, give some idea of the excellent progress made since the site was cleared last summer in erecting Tennessee River Pulp & Paper Company's 500 T/D kraft pulp and liner board plant at Counce, Tennessee.

Work completed to date includes all concrete foundations, underground piping, flume and chip storage areas, roll storage building, shop and storeroom building, and the two major office buildings. Lime kiln and caustic areas are well advanced. Despite the steel strike, the project is progressing satisfactorily as scheduled.

Engineering, procurement, and construction are the responsibility of one contractor—The M. W. Kellogg Company, which will deliver the facilities early in 1961 on a ready-to-operate (turn-key) basis for a predetermined lump sum. In this case, Kellogg subcontracted plant engineering to H.A. Simons International, Ltd.

New Approach to New Mills

Kellogg, a subsidiary of Pullman Incorporated, has undertaken hundreds of processing plants for leading companies throughout the world on the same turn-key basis it now offers to the pulp and paper industry. By coordinating and controlling all phases of the work under one central management, Kellogg helps clients eliminate the costly duplication of many individual subcontractors . . . assures optimum investments in new facilities.

To Use Hard and Soft Woods

At Tennessee River, hardwood can be used for as much as 25% of pulp requirements. Hard and soft wood pulp will be produced in parallel systems of digesters, refiners, screens, washers, and then charged to hardwood and softwood high density pulp storage silos. Subsequent refining will be performed in a flexible arrangement of 700-hp disc refiners. The selective distribution of hardwood and softwood pulp to the primary and secondary headboxes on the 262" paper machine will govern the composition of the final sheet.

Modern Mill Automation

The mill will make wide use of advanced systems of automatic control. Chips will be pneumatically conveyed to outside storage and from storage to the silos. Automatic capping valves and blow valves will be utilized, and the chip flow from stockpile through digester discharge will be remotely controlled from the digester room.

Other Design Features

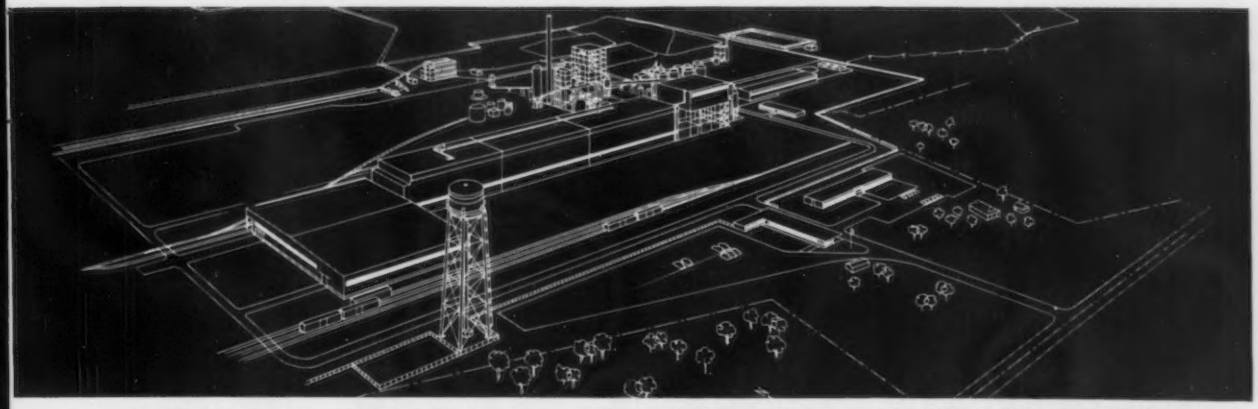
The plan for the mill to stockpile chips in outdoor storage, rather than logs, is unique in the Southeast. Also outstanding is a use of steam turbines in the refining operation, where hot-stock refiners will contribute appreciably to higher wood yield. Climate and recent advances in boiler design were utilized in layout. Both power and recovery boilers will feature outdoor installation—a Kellogg design practice which reduces costs, and helps optimize total mill investment.

KELLOGG

THE M. W. KELLOGG COMPANY

711 Third Avenue, New York 17, N. Y. *A Subsidiary of Pullman Incorporated*

Offices of Kellogg subsidiary companies:
Toronto, London, Paris, Buenos Aires, Rio de Janeiro, Caracas



Architect's drawing of the complete project for Tennessee River Pulp & Paper Company, as it will look when this 500 T/D kraft pulp and liner board plant and offsite facilities are completed by Kellogg early in 1961.

PAPER PEOPLE

(Continued from page 67)

EASTERN AREA APPOINTMENTS

For the eastern area of the division, the following assignments were announced:

P. T. Gallagher promoted to sales supervisor—specialty—to direct the work of all eastern area specialty sales representatives.

George Shally, promoted to sales supervisor, New York region; J. W. Juen, promoted to sales supervisor, food store services, New York; E. H. Ulrich, Jr., district representative, Chicago.

J. P. Burns, promoted to district representative, New York; F. B. Gleason, assigned to undertake special assignments in connection with the eastern area introduction of waxed and poly papers; M. D. Tolbert, promoted to specialty sales representative, Minneapolis.

OTHER PERSONNEL ASSIGNMENTS

The organizational change also has resulted in the creation of the following personnel assignments:

E. J. Ragghianti, has been named product manager, industrial towels and tissues, to replace G. H. Tuft. Mr. Ragghianti was most recently district representative, Denver.

N. R. Porter, formerly district representative, agricultural papers, northern California, has been promoted to assistant product manager, wraps and bags.

Leonard Saxe moves up to assistant product manager, waxed papers, polyethylene coated papers and gummed tape. His most recent position was district representative, northern California.

R. G. Eldredge is promoted to sales supervisor from his former position as district representative, Dallas central territory.

Jack Martin, sales representative, Gaylord bags and wrapping papers, replaces Mr. Eldredge.

J. A. Hansen is district representative, Denver; R. G. Herndon sales representative, northern California; Jerry Frigon, agricultural papers salesman, northern California; H. S. Needham, sales representative, food store services; William Bloom, sales representative, paper merchant, janitorial and restaurant supply distributors; J. N. Shrader, sales representative, food stores services; E. R. Borcherdt, specialty sales representative, food stores services; Jim Westphal and Jack Fisher, promoted to specialty sales representatives, paper merchant, janitorial and restaurant supply distributors.

E. B. Brundige

W. H. Hendricks

Three at Mead Given New Assignments

Additional management responsibilities have been assumed by three employees at The Mead Corp., Chillicothe, Ohio, Division.

Ernest B. Brundige, production manager, has been given expanded responsibilities and now heads all division manufacturing operations; Warren E. Henricks has been named assistant to the division manager; and Milton V. Jones has been promoted to succeed Mr. Henricks as division engineer.

In his new assignment, Mr. Brundige will direct pulping, papermaking, and coating operations in addition to his responsibilities over finishing and coating which he has held since 1957. A Mead employee since 1922, Mr. Brundige was named assistant chief inspector in 1925, and served as chief inspector and superintendent of the inspection and sorting departments before becoming assistant production manager in 1952.

Mr. Henricks' new duties will include responsibilities in general administration and in the planning and development of the division's capital expenditure program. He joined Mead in 1947 shortly after graduating from the University of Illinois with a B.S. degree in mechanical engineering. Following completion of a company training program, he served as assistant to the maintenance superintendent. Subsequently, he was named assistant master mechanic, assistant division engineer, and division engineer.

M. V. Jones

Mr. Jones moves up to the top division engineering post after seven years as assistant division engineer. A mechanical engineering graduate of Ohio State University, Mr. Jones was employed by Mead in 1946 as a junior engineer. He was promoted to an engineer in 1947, became chief draftsman in 1948 and assistant division engineer in 1952. Prior to joining Mead, he was engaged in research engineering at Battelle Memorial Institute for three years.

Hurlbut Replaces Baldwin As Apex President

The board of directors of American Paper Exports, Inc., has announced the election of William D. Hurlbut as president of the company. Mr. Hurlbut replaces Irving C. Baldwin who has retired.

Mr. Hurlbut, whose father, the late William N. Hurlbut served as a vice president and a director of International Paper Co. for many years, joined the company in 1952 following military service overseas. After several assignments in other sales divisions of International Paper he joined Apex in 1956. He was elected a vice president of the subsidiary in 1957 and executive vice president in 1959.

B&W Two-Drum Stirling Boiler for Union Bag-Camp Paper Corporation will burn unhogged bark, natural gas, and oil to generate steam for power and process requirements of Savannah, Georgia, Mill.

Why America's Largest Bark-Burning Boiler is a B&W Boiler

The highest rated bark-burning boiler ever built will soon be generating 550,000 pounds of steam per hour at Union Bag-Camp Paper Corporation's huge mill at Savannah, Georgia. It will burn unhogged bark as a primary fuel but can also be fired with natural gas or oil—singly or in combination with the other fuels. The unit has a design pressure of 1250 psi at the superheater outlet and will operate at 950 F.

The designer and manufacturer? Babcock & Wilcox. Long associated with burning all kinds of fuel for steam generation, B&W has proved time and again its ability to supply dependable and efficient boilers of every size to burn every conceivable kind of fuel. And B&W's manufacturing capacity and know-how assure quick and dependable delivery schedules. That's why profit-minded steam users everywhere choose B&W to solve their fuel burning and steam generating problems.

If you're looking for ways to increase boiler efficiency and achieve fuel economies that will increase your profits, your first step is a talk with B&W. Contact your local B&W sales engineer or write The Babcock & Wilcox Company, Boiler Division, Barberton, Ohio.

P-822

B&W

THE BABCOCK & WILCOX COMPANY

BOILER DIVISION

PTJ NEWS OF CONVERTERS

C. F. Raber

W. J. Wakefield

J. P. Friel

R. L. Hall

Packaging Corp. Names Executives

Four executive appointments have been announced by Packaging Corporation of America.

Named vice president—industrial relations, is Charles F. Raber, of Grand Rapids, Mich., who was vice president and director of industrial relations at American Box Board Co. before it merged with Central Fibre Products Co. and Ohio Boxboard Co. to form Packaging Corp. of America. Mr. Raber joined American Box Board in 1931, and held the positions of industrial engineering and personnel manager, becoming director of industrial relations in 1945.

William J. Wakefield, of Hutchinson, Kan., was appointed vice president of Packaging Corp. of America with responsibility for traffic and transportation, procurement, reciprocal relations, and special administrative assignments. He was director of personnel and industrial relations of Central Fibre Products Co.

J. P. Friel, of Chicago, a veteran traffic and transportation specialist, was appointed director of traffic and transportation. He joined Central Fibre Products Co. in 1927 as traffic manager, and became vice president of traffic and transportation in 1952.

Rowland L. Hall, of East Grand Rapids, Mich., became director of purchasing. He formerly was director of purchases of American Box Board.

A UNIQUE CHECK VALVE THAT'S UNSURPASSED IN WATER, AIR, OIL OR GAS SERVICE

SILENT • SEATLESS • LOW PRESSURE DROP

Technocheck©

OUTPERFORMS • OUTWEARS OTHER VALVES • COSTS LESS TO MAINTAIN

In field service in a wide range of water, gas, air and oil applications, Technocheck's performance and reliability are unsurpassed. Its exclusive design eliminates valve seats. Tight sealing, low pressure drop and long life with low upkeep are some of its important characteristics.

SCHEDULE OF STANDARD VALVE SIZES

GENERAL DESCRIPTION	PSI	SIZES
Cast Iron, Flanged	125	4", 6", 8"
Steel, Male Threaded Ends	150	1½", 2", 2½", 3"
Steel, Flanged	150	3", 4", 6", 8"
PVC, Male Threaded Ends	125	1½", 2", 3"
PVC, Flanged	125	2", 3"
PVC, Flanged	50	4", 6", 8"

We invite inquiries on other sizes and in special materials.

Techno Corporation Dept. PTJ
16 West 5th Street, Erie, Pa.

U. S. Envelope Names Stibolt Gen. Sales Mgr.

The appoin'ment of Hans P. Stibolt as general manager of sales, effective at once, was announced by

HOW THE SOUTHWORTH LIFT TABLE* *improved roll handling* AT INTERNATIONAL

Photos
Courtesy of
International Paper Company

The flexible and economical rewinder loading installation, illustrated here, simplifies the mechanical handling of the heavy roll. In addition, the roll is readily placed into the bearings and locked into position without any undue jarring of the shaft and roll stand.

This is another example of how Southworth works with plant engineers to improve materials handling, cut costs by bettering the use of existing production equipment, and minimize waste . . . to say nothing about reducing accident hazards caused by chance, manual strain or fatigue.

SOUTHWORTH MACHINE CO. since 1890

*Patents Pending

For Details Write or Call Collect:

SOUTHWORTH MACHINE CO.

327 WARREN AVENUE, PORTLAND, MAINE, SPruce 4-1424

Mfrs. of Paper Conditioners; Automatic Skid Lifts; Lift Tables; Skid Turners; Hand, Foot, Motor Driven Punching Machines; Humidifiers; Envelope Presses; Punch Heads; Tabbing Knives and Corner Cutters plus Custom Built Equipment.

Where RELIABILITY COUNTS MOST

—on PAPER MACHINES

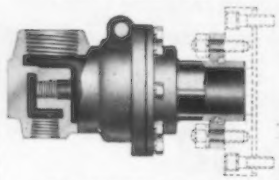
Patent No. 2,836,439

—Mill Installs 50!

BARCO TYPE C Rotary JOINTS

- **RESISTS SEAL RING BREAKAGE**—The spherical seal ring is under compression, not tension, loading. Self-adjusting for wear. Seal withstands shock loads and alternating hot and cold service.
- **WIDE SPACED BEARINGS**—Two, instead of one . . . increased bearing area. No lubrication required. Lowest friction.
- **200 P.S.I. STEAM RATING**—Heavy duty service at *no extra cost*. Eight sizes, ½" to 3".

FOR FLANGE CONNECTION



NEW TYPE CF
Ask for Catalog Sheet 331

TODAY there is a better rotary joint for paper machine service. Barco's *Type C* (and new *Type CF)* joints give mills the kind of performance needed for efficient operation of new machines, as well as modernization of older machines.

The installation shown above is in a well-known Massachusetts mill. Fifty 1½" Barco *Type C* joints handle steam supply and syphon drainage of the dryers.

Barco joints are available from LOCAL STOCKS throughout the country. Standard series joints handle all steam pressures to 200 psi—one basic style for all services, single flow or syphon flow. *New Type CF offered for journal flange connections.* ASK FOR INFORMATION.

FOUNDED 1908 BARCO PRODUCTS BACKED BY EXPERIENCE

BARCO MANUFACTURING CO.
5330 Hough Street, Barrington, Illinois
The Only Truly Complete
Line of Flexible Ball, Swivel, Swing and Rotary Joints
In Canada: The Holden Co., Ltd., Montreal

Albert F. Duval, president of the United States Envelope Co.

Mr. Stibolt has been with United States Envelope since May 1947 when he became a salesman for its Kellogg Envelope Division following service as a first lieutenant in Army Ordnance during World War II.

Pasek Joins Paypar As General Manager

Ralph F. Pasek has been named general manager of Paypar Envelope Co. Previously production manager and assistant to the president of Central Envelope and Lithographing Co., Chicago, Mr. Pasek most recently was in charge of graphic arts purchasing for Fingerhut Manufacturing Co., Minneapolis.

C. G. Ellington

Ellington Named President Of Mid-West-Pak

Charles G. Ellington has been named new president of Mid-West-Pak Corp., Belvidere, Ill., a subsidiary of The Champion Paper and Fibre Co., Hamilton, Ohio, effective April 1. He succeeds J. Bruce Morford, who is retiring. Mr. Ellington, for the immediate present, will retain his position as director of planning, converting products group, at Champion.

Named vice president and general manager at Mid-West-Pak was H. Stanley Sackett, vice president, operations, since 1958.

The firm's new president has held management positions in other Champion subsidiaries. In 1957 he was assistant to the president of Butler Paper Products Co., Toledo, Ohio, and in 1958-59 was vice president and general manager of Vaculite Corp. of Cambridge, Mass., and Hamilton, Ohio.

Mr. Morford, who joined Champion in 1946, became Mid-West-Pak's president when Champion purchased

No matter what your product, process or problem involving white pigmentation, look to TITANOX® pigments and our technical service for the answer. Titanium Pigment Corporation, 111 Broadway, New York 6, N. Y.; offices and warehouses in principal cities. In Canada: Canadian Titanium Pigments Ltd., Montreal.

the firm in 1954. Mr. Sackett, before joining Mid-West-Pak in 1958, had been general manager of Pillsbury Co.'s Hamilton plant.

The Belvidere company, producer of bottle closures, paper containers, and related items, recently introduced to commercial production a disposable plastic drinking cup called Thermokup. Production of this item had multiplied several times in the last several months.

Busch Steps Up At American Sisalkraft

Richard W. Busch has been appointed purchasing agent at American Sisalkraft Corp., Attleboro, Mass. He has been assistant purchasing agent and succeeds Charles E. Judge who recently retired after 37 years with the firm.

A graduate of Iowa Wesleyan University, Mr. Busch was formerly with Sisalkraft's Industrial Sales Division in Chicago before coming to the Attleboro plant eight years ago.

Replacing Mr. Busch as assistant purchasing agent is Richard A. Breed. Mr. Breed has been in charge of inventory control for Sisalkraft for the past three years.

New Adhesive Paper Company Formed

Murray McDougal, long prominent in the pressure-sensitive adhesive field, has been named president of a newly formed California corporation, Presto Adhesive Paper Co., Inc., manufacturer of pressure-sensitive adhesive paper stocks for the graphic arts field.

James Rieger, president of the Presto Adhesive Paper Co. of Ohio, is vice-president and director of the new company. The plant is conveniently located in a new, modern building at 1245 Flower Street, Glendale, California, in the Grand Central Industrial Centre.

Matthews Joins Olin Mathieson Packaging Div.

Churchill Matthews has been appointed carton sales representative for the Packaging Division of Olin Mathieson Chemical Corp.

Mr. Matthews has been active in packaging sales and sales management since 1949 and prior to joining Olin was vice president and treasurer of the Delta Carton Corp. He will be located in Olin Mathieson's Packaging Division sales office in the American Bank Building, 200 Carondelet, New Orleans, La., and will cover the Gulf Coast area of Texas, Louisiana, Mississippi, and Alabama.

Operations Start at Hoerner Missouri Plant

R. N. Hoerner, president and chairman of the board of Hoerner Boxes, Inc., Keokuk, Iowa, has announced the completion of its new sheet plant, Battlefield Road & Scenic, Springfield, Mo. Manufacturing operations were started February 15.

R. L. Casady is general manager of the new sheet plant. A. Eugene Palmer is superintendent, and Roy Q. Bell is office manager.

Springfield is the eleventh in the chain of plants operated by Hoerner Boxes, Inc. Other Hoerner plants are located at Sioux Falls, S. D.; Minneapolis, Minn.; Des Moines, Ottumwa, and Keokuk, Iowa; Sand Springs, Okla.; Fort Worth, Tex.; Fort Smith and Little Rock, Ark., and Tupelo, Miss.

Figures of the Week

PAPER PRODUCTION RATIO REPORT—American Paper & Pulp Assn. Figures
(Production as per cent of normal capacity)

COMPARATIVE WEEKLY SUMMARIES

	Jan. 23	Jan. 30	Feb. 6	Feb. 13	Feb. 20
1960	96.8r	96.3	97.8r	97.6r	96.5
	Jan. 24	Jan. 31	Feb. 7	Feb. 14	Feb. 21
1959	90.5	89.2	90.1	88.1	90.9

r Revised

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1960	96.7‡	—	—	—	—	—	—	—	—	—	—	—	—
1959	87.8	90.5	93.2	94.4	95.5	95.6	84.5	96.0	92.4	97.4	96.2	86.6	94.0

‡ Preliminary

COMPARATIVE YEARLY SUMMARIES

	1953	1954	1955	1956	1957	1958	1959	1960
Year to date	95.2	94.3	94.7	100.0	95.3	87.8	88.5	97.0
Year Average	92.3	91.6	96.2	97.9	90.4	87.0	94.0	—

All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available.

PAPERBOARD OPERATING RATIOS†—National Paperboard Assn. Figures

COMPARATIVE WEEKLY SUMMARIES

	Jan. 23	Jan. 30	Feb. 6	Feb. 13	Feb. 20
1960	95	97	96	96	96
	Jan. 24	Jan. 31	Feb. 7	Feb. 14	Feb. 21
1959	91	92	93	94	94

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1960	92	—	—	—	—	—	—	—	—	—	—	—	—
1959	89	94	95	94	96	96	83	97	92	97	94	80	92

† *Per cents of operation based on "inch-hours" reported on a 6-day basis to the National Paperboard Association.*

SUMMARY OF PAPERBOARD STATISTICS—National Paperboard Assn. Figures

ITEM	THIS WEEK ENDING Feb. 20, 1960	LAST WEEK ENDING Feb. 13, 1960	CUMULATIVE TO DATE Jan. 1 to Feb. 20, 1960, incl.
% Activity	96%	96%	94%
Total	329,793	325,402	2,216,275
Liner	118,937	114,601	775,041
Corrugating Material	49,560	51,911	345,296
Chip & Filler Board	6,265	4,760	35,898
Total Containerboard	174,762	171,272	1,156,235
Folding	57,446	56,111	399,678
Set-Up	10,462	11,503	82,546
Special Food Board	28,132	30,175	196,369
Other	58,991	56,341	381,447
Total Boxboard	155,031	154,130	1,060,040
Total Orders			
Received	298,097	304,815	
Unfilled End of Week	440,962	466,834	

NEWS OF SUPPLIERS

Woodpulp, Inc., has appointed Frank J. Venn vice president. Mr. Venn has been associated with the pulp and secondary fiber fields of the industry for over 17 years, continuing now in both sales and traffic capacities. His headquarters will remain at the company's New York offices in the Chrysler Building.

A. J. Skorupski

G. V. Rittenhouse

Stanley Steel Strapping, division of The Stanley Works, New Britain, Conn., has appointed Anthony J. Skorupski sales representative in northern Illinois. He joined the division in 1957 as a sales trainee.

A native of Hartford, Conn., Mr. Skorupski attended public schools in Wethersfield, Conn., and later St. John's Preparatory School in Danvers, Mass. He was graduated in 1955 from Villanova University, Pa., with a B.S. degree in economics. He served with the Army in Germany for two years and was discharged in 1957.

The Virginia Smelting Co., West Norfolk, Va., takes pleasure in announcing the appointment of George V. Rittenhouse as district manager, industrial sales division, with headquarters at 270 Madison Avenue, New York City.

Mr. Rittenhouse was graduated from Clarkson College of Technology in 1942 with a degree in chemical engineering. Prior to joining the Virginia Smelting Co.'s sales staff in 1947, he spent 3½ years in the U. S. Army and was also associated with the General Chemical Division of Allied Chemical Corp.

Tyson Bearing Co., Massillon, Ohio, announces a two-million dollar expansion project starting this month which will substantially add to the plant's tapered roller bearing capacity.

Completion of the project in July 1960, involving additions to both

ONE
NEW SUPPLIER

and your copy of Lockwood's Directory of the Paper and Allied Trades has more than paid its modest cost of $12

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New York 36, New York

Send me one by return mail.

Name .....

Company .....

Address .....

☐ Check enclosed ☐ Bill me ☐ Bill the company

plant structure and equipment, will enable Tyson to almost triple current tapered roller bearing production in sizes ranging from four and one-half to six inches outside diameter. This size range is used in heavy farm equipment, large earth-moving vehicles, buses, tractor-trailor trucks, and medium industrial machinery.

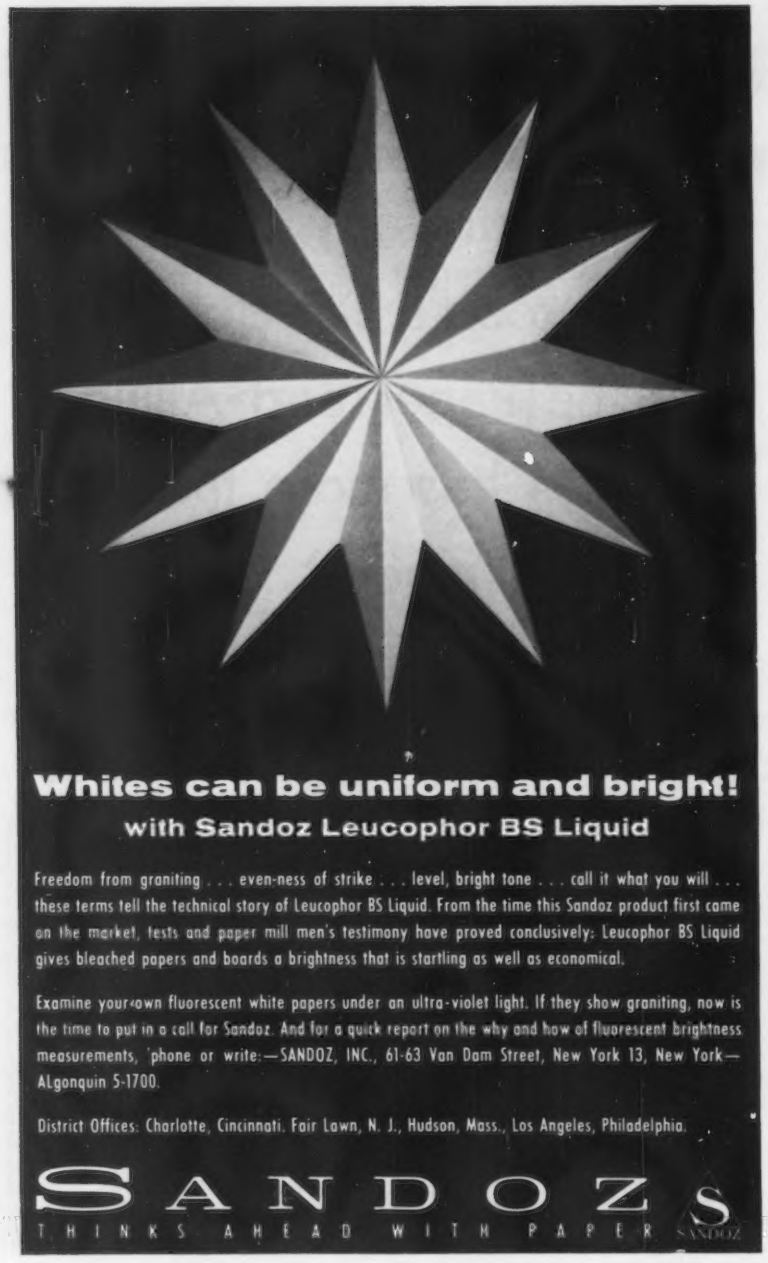
The start of this project immediately follows completion of two earlier plant capacity expansions within the last 18 months.

Tyson Bearing Co. became a division of SKF Industries, Inc., July 1, 1957, and manufactures tapered roller bearings exclusively for applications in automotive, farm, transportation and military equipment, heavy industrial machinery and aircraft.

Shawinigan Resins Corp. has appointed Saul M. Cohen a group leader in the research department.

In his new capacity, which is effective immediately, Dr. Cohen will organize a research group which will be responsible for exploratory research in the synthesis of totally new plastic resins.

A native of Springfield, Mass., Dr. Cohen joined Shawinigan's research department in 1954 as a research chemist. He received a B. S. degree in chemistry in 1948 from the University of Massachusetts. He was awarded an M. S. degree in 1950 and a Ph. D. degree in organic chemistry in 1952 both from the University of Illinois.


Whites can be uniform and bright!
with Sandoz Leucophor BS Liquid
Freedom from graniting . . . even-ness of strike . . . level, bright tone . . . call it what you will . . . these terms tell the technical story of Leucophor BS Liquid. From the time this Sandoz product first came on the market, tests and paper mill men's testimony have proved conclusively: Leucophor BS Liquid gives bleached papers and boards a brightness that is startling as well as economical.
Examine your own fluorescent white papers under an ultra-violet light. If they show graniting, now is the time to put in a call for Sandoz. And for a quick report on the why and how of fluorescent brightness measurements, 'phone or write:—SANDOZ, INC., 61-63 Van Dam Street, New York 13, New York—ALgonquin 5-1700.
District Offices: Charlotte, Cincinnati, Fair Lawn, N. J., Hudson, Mass., Los Angeles, Philadelphia.
SANDOZ
THINKS AHEAD WITH PAPER
SANDOZ

C. E. Ward

W. C. Gallagher

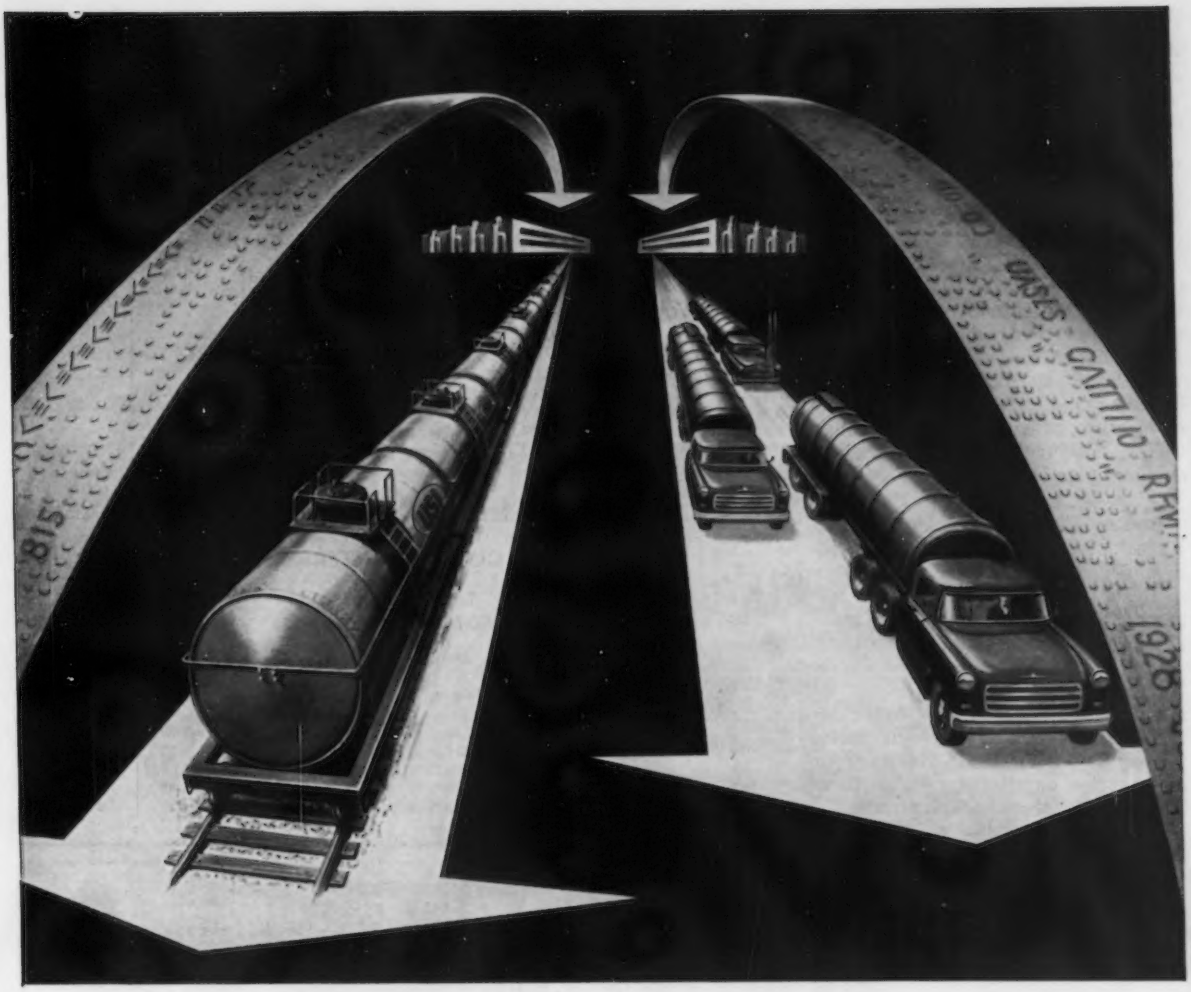
John W. Bolton & Sons, Inc., and The Emerson Manufacturing Co., Division, has appointed Charles E. Ward a sales representative. Mr. Ward will call on pulp and paper mills throughout Illinois, Indiana, Kansas and Colorado and will make his headquarters in Chicago. He will work under the supervision of Robert W. Hohman, senior sales engineer.

Previously, Mr. Ward spent seven years with the Johns Mansville Co. during which time he was in charge of sales of their Dutch Brand products in New York State.

A. E. Staley Manufacturing Co. announces promotion of W. C. Gallagher to Southern manager for paper industry sales. Mr. Gallagher had been paper industry sales technical representative in the Southeastern states. In his new position he will direct the Staley field organization serving the paper, corrugating, building materials and related industries in the Southern U. S. He will continue to headquarter in Charlotte, N. C.

A 1937 graduate of New York State College of Forestry, Mr. Gallagher was associated with various paper mills as chief chemist and assistant manager, served as an Army officer during World War II, and joined Staley's in 1946. He headed the company's paper laboratory for seven years, went to Australia with Reichhold Chemicals, returned to Staley's in 1957 as West Coast paper technical sales representative, and transferred to the Southeastern territory last year.

Rohm & Haas Co., Philadelphia, has appointed Charles H. McBurney director of research. The position was previously held by Dr. Ralph



AUTOMATION SPEEDS U.S.I. CHLORINE AND CAUSTIC SODA

. . . from Huntsville, Alabama

To U.S.I., customers' orders are high priority communications. That's why our offices and plants all over the country are linked in a 7,000-mile private wire network of teletypes and data processing equipment.

As one of U.S.I.'s customers for chlorine or caustic soda, here is the way this automated order handling system would insure quick delivery of *your* shipment. When your order is placed with the U.S.I. sales office in your area, it is transmitted by coded tape direct to Huntsville, Ala. Here automatic machines use the tape to produce shipping papers, invoice and such records as are needed for internal use. The system cuts as much as four days from the time that might be required to process your order by ordinary methods.

Ample capacity at U.S.I.'s two Huntsville plants is further assurance of expedited service.

Liquid chlorine is shipped from Huntsville in tank cars, commercial grade 50% liquid caustic soda in tank cars, tank trucks and barges. Other U.S.I. plants supply ammonia, polyethylene and sodium peroxide. Make U.S.I. *your* supplier of these paper chemicals. Our products and ability to serve you are discussed in the booklet "National Distillers and Chemical Corporation Expands in the Chemical Industry". We'll be happy to send you a copy.

U.S. Industrial Chemicals Co.
99 Park Avenue, New York 16, N. Y.
We'd like to know more about U.S.I.

- ☐ Send booklet "National Distillers Expands in the Chemical Industry"
- ☐ Send information on your Automated Order Handling System
- ☐ Have a salesman call for an appointment to discuss chlorine or caustic soda
- ☐ Put me on your mailing list

Name_____ Title_____

Company_____

Address_____

City and State_____

U.S.I INDUSTRIAL CHEMICALS CO.
Division of National Distillers and Chemical Corp.
99 Park Ave., New York 16, N. Y.
Branches in principal cities

Connor who continues as vice president in charge of research and chairman of the board. Dr. McBurney has served as assistant director of research for the past ten years.

Dr. McBurney received his B.S. in chemistry from the University of Oregon and his M.S. from Oregon State, where he worked in the field of biochemistry with Dr. Roger Williams. He received his Ph.D. in organic chemistry in 1939 from the University of Illinois where his research was directed by Dr. R. C. Fuson. Since that time he has been with Rohm & Haas where he has been engaged in research in the fields of leather, textiles, ion exchange resins, coatings, agricultural chemicals and plastics.

Bowen Engineering, Inc., North Branch, N. J., the nation's largest firm devoted solely to spray drying and spray drying technology, has named Theodore R. Richardson manager of the engineering department.

Mr. Richardson, a registered New Jersey professional engineer and an associate member of the American Institute of Electrical Engineers, joined Bowen in 1951. He received his electrical engineering degree from Rensselaer Polytechnic Institute.

CHAS. T. MAIN, INC.

ENGINEERS

PROCESS STUDIES, DESIGN, SPECIFICATIONS, CONSTRUCTION SUPERVISION

PULP AND PAPER MILLS

STEAM, HYDRAULIC AND ELECTRICAL ENGINEERING
REPORTS, CONSULTATION, VALUATIONS

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BOSTON, MASSACHUSETTS
CHARLOTTE, NORTH CAROLINA

Stadler Hurter

International Ltd.

Engineers • Designers • Consultants

Specializing since 1923 in all phases of design, modernization and expansion of pulp and paper mills from forest to finished product.

1501 ST. CATHERINE ST. W.
MONTREAL

NEW YORK • MEXICO CITY • PARIS • ZURICH

Prices of Fibers

MARKET WOOD PULP

FIRST QUARTER CONTRACT PRICES PER SHORT AIR-DRY TON

Delivered Basis

	U.S.	Canadian	Swedish	Finnish	Norwegian
Groundwood	$ 82.50/ 90.00	$82.50/ 90.00	§$90.00/ —	§$80.00/ —	§$90.00/ —
Bleached Gw'd	$ 97.50/100.00	$97.50/100.00			
Kraft, Blchd.	157.00/ —	160.00/162.50	§157.00/162.50*		§157.50/ —
Kraft, Blchd. Hdwd.	152.00/ —		§137.00/ —		
Kraft, Semi-bleached.	140.00/ —	140.00/ —			
Kraft, Unbl.	117.50/125.00	125.00/130.00	†125.00/130.00	125.00/ —	
Sulphite, Blchd.	‡150.00/155.00	‡150.00/155.00	*155.00/ —	*155.00/ —	155.00/ —
Sulphite, Bl. Hdwd.	150.00/ —				
Sulphite, Unblchd.	135.00/ —	135.00/ —	†135.00/ —	*135.00/ —	
Sulphite, Unb'l. Gl'sn		140.00/ —	†134.00/ —		
Soda, Blchd.	147.00/150.00	150.00/ —			

§ On Dock Atlantic Ports. * Freight allowed. † Varying Freight Allowances.
‡ Depending on Brightness.

COTTON LINTERS

F.O.B. OIL MILLS
WEEK ENDED FEBRUARY 23

	Atlanta	Memphis	Dallas	Los Angeles
Grade 1	n.a.	n.a.	n.a.	n.a.
2	n.a.	n.a.	n.a.	n.a.
3	$7.50/7.00	$8.50/7.50	$7.50/7.00	n.a.
4	7.00/6.25	7.25/6.25	6.50/6.25	n.a.
5	6.25/5.75	6.00/5.50	6.00/5.50	8.50/7.00
6	5.75/4.75	5.25/5.00	5.25/5.00	6.50/4.50
7	4.75/4.25	4.50/4.00	4.75/4.00	4.25/4.00

WASTE PAPER MARKET

Mill Prices, f.o.b. Trucks Shipping Point — Includes Brokerage

These quotations are a partial indication of the price range on volume tonnage in each market on the date specified, as gathered from major dealers and brokers. SPECIAL PACKINGS AND SPOT TONNAGE NOT INCLUDED. Prices nominal.

	New York	Boston	Chicago	Los Angeles
	Feb. 29	Feb. 29	March	March
No. 1 Mixed Paper	$ 7.00/ 9.00	9.00/ 11.00	8.00/ —	12.00/ 13.00
No. 1 News	14.00/ 15.00	14.00/ 15.00	16.00/ —	14.00/ —
Overissue News (Lg. size)	13.00/ 15.00	13.00/ 15.00	21.00/ —	19.00/ 20.00
Mill Wrappers	19.00/ 22.00	13.00/ 15.00	11.00/ —	14.00/ 15.00
Old Corrugated Containers	22.00/ 23.00	21.50/ 22.00	20.00/ —	23.00/ —
Super Resorted Kraft Paper	35.00/ 40.00	— / —	30.00/ —	55.00/ —
New Double Kr. Ld. Corr. Cuts	32.50/ 35.00	35.00/ —	32.50/ —	35.00/ —
(Semi-chem. medium)	45.00/ —	45.00/ —	42.50/ —	— / —
New 100% Kraft Corr. Cuts	40.00/ 42.50	— / —	57.50/ —	— / —
New Br. Kraft, Env. Cuts	70.00/ 75.00	70.00/ 75.00	52.50/ —	55.00/ —
New Br. Kr. Bag Waste Prntd.	55.00/ 60.00	55.00/ 60.00	52.50/ —	55.00/ —
New Br. Kr. Bag Waste Unprintd.	60.00/ 65.00	65.00/ 75.00	60.00/ —	60.00/ —
No. 1 Groundwood Shvs.	25.00/ 30.00	25.00/ 30.00	22.00/ —	32.50/ 35.00
White Newsblanks	50.00/ 55.00	50.00/ 55.00	40.00/ —	60.00/ —
No. 1 Soft White Shvs.	60.00/ 65.00	57.50/ 60.00	60.00/ —	70.00/ 75.00
Super Soft White Shvs.	65.00/ 75.00	75.00/ 85.00	70.00/ —	— / —
Hd. White Shvs.	85.00/ 90.00	90.00/100.00	85.00/ —	95.00/ —
Hd. White nv. Cuts	100.00/105.00	105.00/110.00	90.00/ —	113.00/ —
Col. Tab. Cards	45.00/ 47.50	45.00/ 47.50	50.00/ —	40.00/ 45.00
Manila Tab. Cards	65.00/ 67.50	65.00/ 67.50	70.00/ —	70.00/ 75.00
No. 1 Col. Ledger	37.50/ 42.50	37.50/ 42.50	42.50/ —	29.50/ 32.50
White Ledger	50.00/ 55.00	52.50/ 57.50	52.50/ —	55.00/ —
Mixed Book & Mag.†	22.00/ 25.00	— / —	14.00/ —	— / —
No. 1 Books‡	19.00/ 21.50	17.00/ 19.00	30.00/ —	16.50/ 18.50

† Includes Time & Life; no coarse groundwood. § Not to exceed 10% of groundwood.

Knox Felts

KNOX WOOLEN COMPANY

CAMDEN, MAINE

America's First Manufacturer of Endless Paper Machine Felts

Jordan Shell and Plug Fillings

TRADE-MARK

POSITIVE

Reg. U. S. Pat. Off.

High Speed Disc Refiner

THE BAHR BROTHERS MFG. CO.

MARION, INDIANA, U. S. A.

WILLIAMS-GRAY COMPANY

221 North LaSalle Street
Chicago 1, Illinois

Serving the Paper Industry

WILLIAMS-GRAY COMPANY 1906

Paul Foster • Peter Talbot

Herb Fishburn • Wes Gallup • Bill French

Lindsay Wires
Knox Woolen Felts
Mount Vernon Dryer Felts
Carrier Rope, Splicing Tissues, Deckle
Webbing, Apron Cloth, Wire Brushes

POTDEVIN

Mill Roll Headers

Here is the modern, cost-saving method of header labeling . . . and portable to move right to the rolls being "headed." Patented regulator applies controlled film of glue.

ESTABLISHED IN 1893 POTDEVIN

POTDEVIN MACHINE CO.

223 North Street • Teterboro, N. J.

Designers and manufacturers of equipment for Bag Making, Printing, Coating, Laminating, Gluing and Labeling

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Another Plant To Serve You

SHIP US IN KALAMAZOO

PACKING PLANTS
CHICAGO, ILL.
WASHINGTON, D. C.
CAMDEN, N. J.
KALAMAZOO, MICH.
LOUISVILLE, KY.

THOMAS PAPER STOCK CO.

1500 N. Hooker St. MO-4-5700 Chicago 22, Ill.

PAPER TRADE JOURNAL

CLEARING HOUSE

HELP WANTED—$1.25 a line. Minimum charge $5.00.
SITUATIONS WANTED—$1.25 a line. Minimum charge $5.00. If repeated ½ rate will be charged for each consecutive repetition.

FOR SALE—$1.25 a line. Minimum charge $5.00.
WANTED—$1.25 a line. Minimum charge $5.00.
OPPORTUNITIES—$1.25 a line. Minimum charge $5.00.

Classified advertising space may also be purchased at $7.00 per single column inch. All classified advertisements are payable in advance.
If box number is used—75 cents additional
Address replies to advertisements appearing under Box Number in care of PAPER TRADE JOURNAL, 40 West 45th Street, New York 19, N. Y.

Help Wanted

PAPER MEN

$5,000 to $50,000

SALES • PRODUCTION • TECHNICAL

Finding and landing THE ONE BEST JOB requires sound analysis, careful planning, proper contacts and skillful negotiation.

Paper men ourselves, and the only recognized professional specialists in the world in our particular field, we assist responsible paper men to accelerate their careers by uncovering and developing THE SPECIFIC SITUATION that most exactly fits the needs of each individual we serve.

If you seek to better yourself, and your performance to date entitles you to our endorsement, we can and will help you. Contact us in absolute confidence for information regarding procedure.

GEO. M. SUNDAY & ASSO.

PERSONNEL CONSULTANTS TO THE PULP, PAPER & ALLIED INDUSTRIES

6 East Monroe, Chicago ANdover 3 1970

MECHANICAL ENGINEER
ELECTRICAL ENGINEER

South's largest newsprint manufacturer has permanent positions available for graduate Electrical and Mechanical Engineers to age 35. Duties are in Mill Engineering Department and include design, cost estimation, equipment selection and layouts, compiling reports, and general engineering work as required in the pulp and paper industry. Prefer applicants with 2 to 5 years pulp and paper mill experience. Starting salary based on qualifications with periodic merit increases. Complete insurance, retirement, and vacation programs established. All replies will be treated in confidence. Submit summary of experience to:

Industrial Relations Department

BOWATERS SOUTHERN PAPER CORPORATION

Calhoun, Tennessee TF

Help Wanted

PURCHASING AGENT TRAINEE

Excellent future opportunity in large west coast lithograph business established in 1872. Young man, college graduate with background in book paper, bristol and paperboard fields essential. Box 60-40 care Paper Trade Journal.

M-7

Help Wanted

WANTED

Man with technical training for paper development work in Pacific Coast paper mill. Preferably someone leaning toward production. Opportunity to advance to supervisory or management position. Specialty paper mill experience desirable. Address Box 60-37 care Paper Trade Journal.

M-7

RESEARCH ENGINEERS

Make a LIFE as well as a LIVING by taking part in some of the most fascinating developments in PAPER TECHNOLOGY while you and your family reside near
Fine Universities and Schools
Cosmopolitan Cities
Favored Vacation Areas

Live in the city or in the country—they are both nearby.

The highly confidential nature of these intriguing development positions prevents any disclosure here. We can only describe them to you in person.

Tell us about YOUR experience—qualified candidates will be invited to visit us at no expense and at a time which is most convenient for YOU.

Your inquiry will be handled in the most confidential and professional manner.

Our Research and Development personnel have been informed about the placement of this ad. Reply Box 60-41 care Paper Trade Journal.

M-14

PUBLIC RELATIONS EXECUTIVE

To head established Public Relations Program for Multi-Plant Pulp and Paper Company located Southeastern United States. Report directly to Vice-President.

Our employees know of this ad. Submit detailed resume to be handled in Confidence to Box 60-56 Care—Paper Trade Journal

Help Wanted Advertisements continued on page 84

SUPPLIERS OF PAPER MACHINERY TO THE WORLD — RPM

ROSS PAPER MACHINERY CO.

265 PASSAIC STREET • NEWARK 4, NEW JERSEY

Cable Address: "JACKROSS Newark: N.Jer" HUMBOLDT 2-2177

CANADA — 199 BAY STREET • TORONTO, ONTARIO • EMPIRE 4-5041

SOUTH — P. O. BOX 2065 • MOBILE, ALABAMA • GREENWOOD 9-1950

QUALITY GUARANTEED MACHINERY ERECTED FOR YOUR INSPECTION

CALENDER STACKS
1— 80" P & J 7 roll; heavy duty
1— 82" Lobdell 5 roll
1— 86" Lobdell 5 roll
1—115" B-C 7 roll
2—124" Downingtown 5 roll & 6 roll
1—128" Downingtown 7 roll

CHIPPERS
1— 88" Murray 10 knife w/600 hp motor
1— 96" Murray 6 knife; A-F Brng.

COATERS
1— 24" Waldron Coater & Embosser
2— 40" Chapman Extrusion Type
3— 65" & 76" Mayers

COMPLETE MACHINES
3—Sandy Hill 81" trim single cyl. Tissue
1—M & W 72" Fourdrinier paper machine

CYLINDER MOLDS
2— 63" face x 36" dia w/rubber couches
1—104" face x 36" dia
1—107" face x 48" dia; A-F Brng
2—111" face x 36" dia; A-F Brng
1—131" face x 42" dia; A-F Brng
1—136" face x 54" dia; SS covering

CYLINDER WET ENDS
Downingtown single cylinder; 99" face x 48" dia.; 18" dia. couch

DRYERS—HYDROSTATICALLY TESTED

24" Dia.:
39—46" face; Chrome plated
1—156" face w/gear and steam joint

28" Dia.:
3— 70" face w/gears & bearings
3— 73" face w/gears & bearings
3— 76" face w/gears & bearings
3— 77" face w/gears & bearings
2— 84" face
2— 84" face w/accessories

36" Dia.:
1— 42" face
2— 44" face
2— 46" face
4— 70" face w/gears & bearings
11— 72" face w/gears & bearings
1— 74" face Lukenweld w/A-F Brng
1— 74" face w/gears & bearings
3— 75" face w/gears & bearings
9— 76" face w/gears & bearings
1— 77" face w/gears & bearings
1— 78" face w/gears & bearings
2— 80" face
5— 84" face
1— 88" face
18— 90" face; complete section
9— 92" face; complete section
1—138" face
10—160" face

42" Dia.:
1—110" face
40—118" face; complete section
1—120" face
1—160" face

48" Dia.:
57— 46" face; chrome plated
13— 82" face; complete section
5— 84" face
24—110" face w/frames & bearings
10—123" face w/gears, frames & bearings
1—128" face

DRIVES—ENCLOSED RIGHT ANGLE
1—Michigan 92½ h.p. ratio 10.1 to 1
1—50 h.p. Reliance VS with MG set & controls; 850-1200 r.p.m.
1—Beloit 65 h.p. Ratio 2.88 to 1
1—Phila. 28 h.p. Ratio 10.56 to 1

EMBOSSERS
1— 80" Hudson Sharp; A-F Brng
2— 62" Textile Machinery Co; w/drives

FILTERS—STEEL VATS
1— 6' face x 3' dia Dorr-Oliver
1— 10' face x 8' dia Oliver chem. sludge filter

FLAT SCREENS
2— 12 Plate IMPCO w/Dunbar Drives
1— 4 plate Tailing Screen

INLETS & HEADBOXES
1—106" Valley w/8" distributing roll

JORDANS
2—Appleton #1 w/A-F Brng
1—N & W Pony w/75 h.p motors
1—Horne w/AF Brngs

MOTORS 3 PH 60 CYCLE
1—100 hp GE; 440 v; 695 rpm
2—100 hp GE; 440 v; 430 rpm
1—350 hp GE; 2200 v; 720 rpm: Synch

PAPER MACHINE DRIVES
1—De Laval 100 h.p. steam turbine w/reducers

PULPER
1—Dilts 16 ft. complete w/125 h.p motor, elec. hoist & oil pump

PUMPS—OPEN IMPELLER
1—Shartle 8 x 16 Triplex
23—Centrifugal Stock and Water Pumps

REELS
1— 36" Kohler Automatic 2 arm unwind reel
1—100" Kohler automatic two arm unwind reel; 60" dia rolls; new condition
1—123" Beloit—2 bowl
1—126" Beloit Aldrich surface drive type
1—150" B & S pope type w/Reliance drive

REFINERS
2—#1 Claflin; A-F Brng
1—24" Bauer Double Disc w/two 50 h.p. motors
1—24" Downingtown Weiner; new
1—Model 185E Bauer w/two 150 h.p. motors
2—Model 410-1 40" Bauer; w/two 400 h.p. motors each; used 6 mos.

ROLL GRINDERS
1—124" x 30" Farrel w/crowning device
1—208" x 32" Farrel w/crowning device

ROLLS

Distributor—Stainless Steel
2— 8" dia. x 115" face
1— 6½" dia. x 115" face

Couch—Rubber Covered
1—14" dia. x 158" face
2—15¼" dia. x 136" face
1—16" dia. x 96" face
2—16" dia. x 198" face
3—17½" dia. x 135" face
1—18¼" dia. x 84½" face
1—18" dia. x 108" face
2—16" dia. x 65" face

Press—Rubber or Brass Covered
71 Miscellaneous sizes. Drawings available

Felt—Steel, Brass, Rubber Covered
335 Miscellaneous sizes. Drawings available

Calender—Chilled Iron
72 Miscellaneous sizes. Drawings available

ROTARY SCREENS
5—Bird #3A, Model 100 w/SS or copper vats
1—Jones & Leithwalk copper lined

SHEETERS—DOUBLE KNIFE
1—157" Masson-Scott; like new

SHEETERS—SINGLE KNIFE
1— 36" Beck w/layboys & backstand
6— 56", 60", 66", & 70" Hamblets w/backstands
1— 65" Kidder w/ elec. eye and layboy
2— 82" Hamblets w/backstands & layboys
1—105" Hamblet
1—112" Hamblet Heavy duty, roller bearing, w/layboy, backstand, monorail, etc. New 1954

SLITTERS AND REWINDERS

18" Maximum Rewind Diameter
1— 72" Cameron Type 26-3 A Duplex

24" Maximum Rewind Diameter
1— 32" Cameron Type 6
3— 42" Cameron Type 6
1— 42" Cameron Type 6 Shear Cut
2— 48" Langston Duplex Shear Cut
2— 52" Cameron Type 6
1— 62" Cameron Type 8
1— 72" Cameron Type 9-5

30" Maximum Rewind Diameter
1— 42" Essex Duplex Shear Cut; A-F Brng
1— 42" Cameron Type 28-3 duplex
1— 60" Langston Shear Cut
1— 62" Cameron Type 6
1— 72" Cameron Type 10; A-F Brng
1— 72" Cameron Type 10 Shear Cut; A-F Brng
1— 92" Cameron Type 28-3 Duplex w/Vari-Drive

36" Maximum Rewind Diameter
1— 62" Cameron Type 8
1— 70" Variable Speed Center Winder
1— 72" Cameron Type 10; A-F Brng

42" Maximum Rewind Diameter
1— 40" Egan Shear Cut; A-F Brng
1— 60" Kidder Model SH Low Bed
1— 72" Beloit Shear Cut
1— 82" Langston Shear Cut; A-F Brng
1— 92" B & S; A-F Brng
1—136" Cameron Type 18; A-F Brng

48" Maximum Rewind Diameter
1— 86" M & W Four Drum Shear Cut
1—114" Langston
1—152" Langston Shear Cut

60" Maximum Rewind Diameter
1—110" Cameron Type 18 w/Motor Drive
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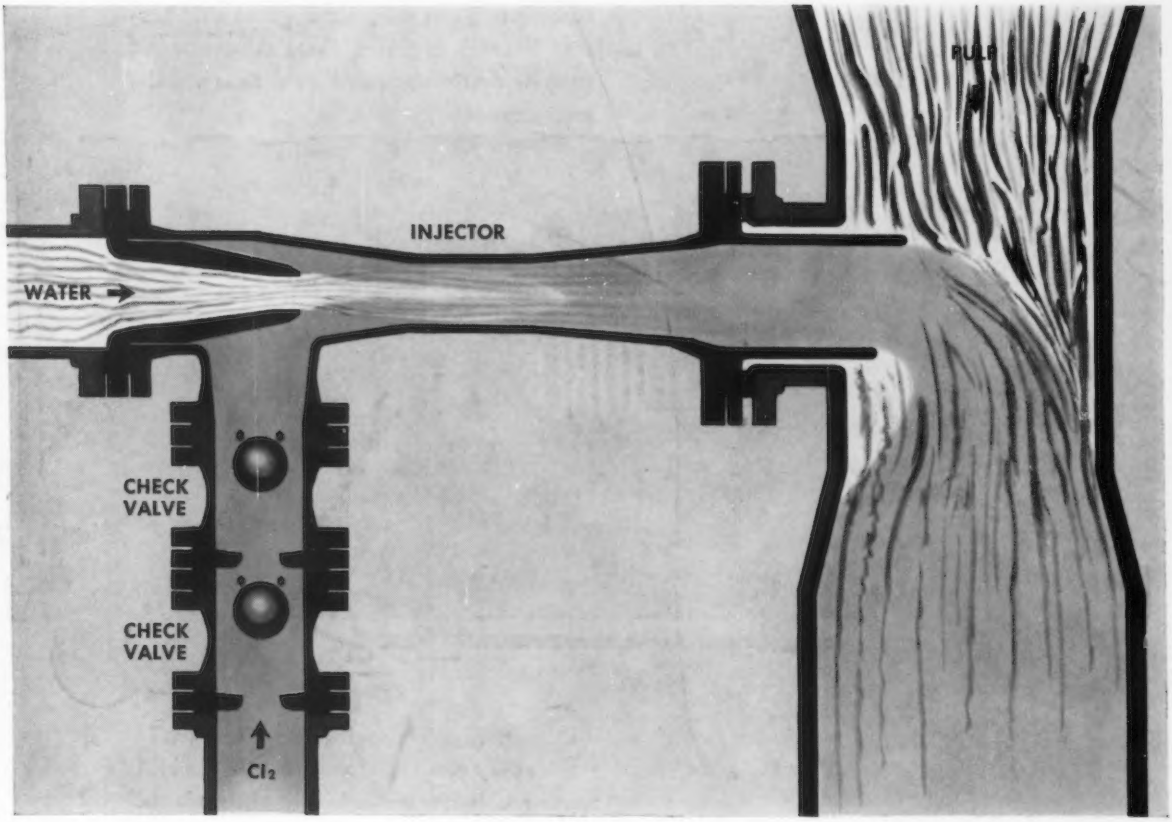

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